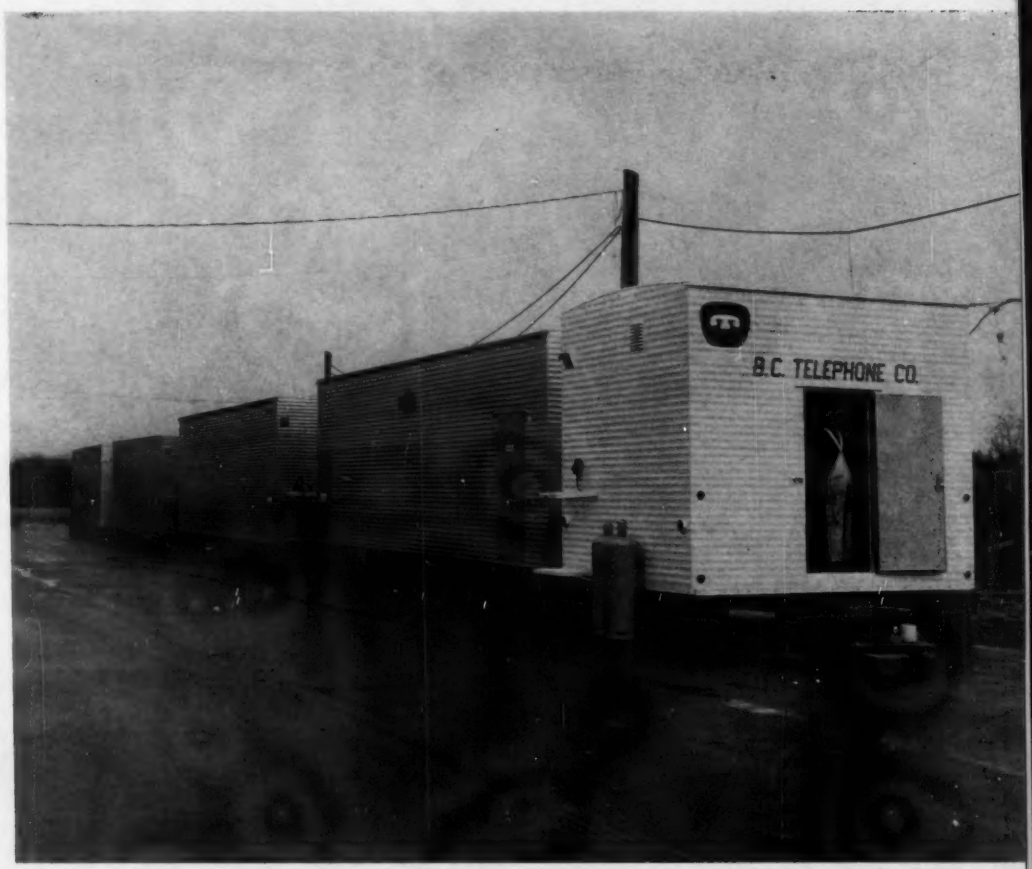
# Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY




The British Columbia Telephone Co. is using portable buildings, fully equipped with automatic exchange and long distance equipment, as unattended dial central offices in various areas of its territory. Soon after this picture was taken at Burnaby, the building at right was moved 800 miles to provide telephone service to a construction project. See story, page 40.

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*Another first!*

# STROMBERG-CARLSON

# 661/665

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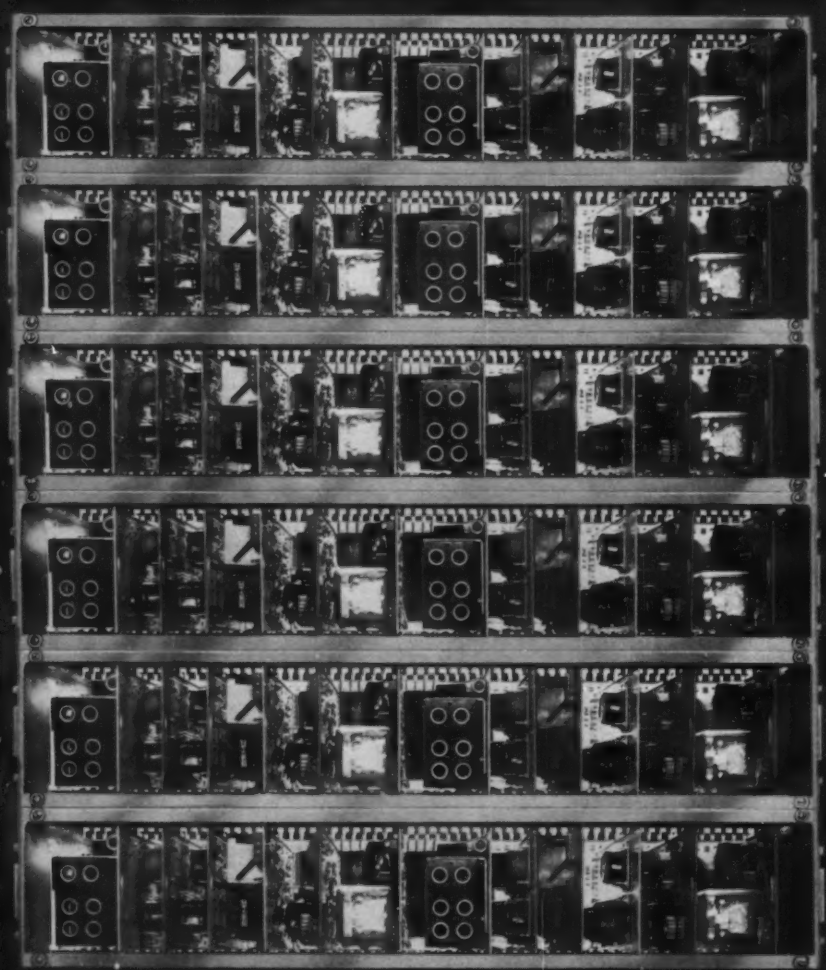
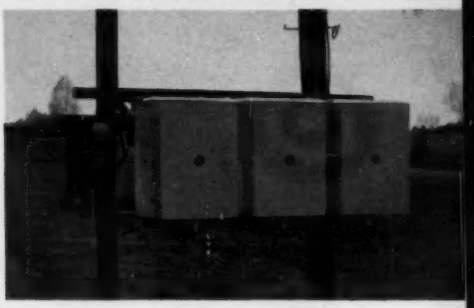


New 12-channel carrier mounts two channels in each unit.

Weatherproof four-channel housing protects subscriber terminals.



# Transistorized 12-channel systems for economical, dependable expansion of service

No other carrier system gives you more flexibility! Both the 661 and the 665 systems come in *stacked or grouped* frequency allocations. In a grouped arrangement, all channels in either system can be repeatered to extend service up to *three times as far* as non-repeatered systems.

*Other key features of both systems:*

- Unusual ease of installation, due to self-regulating receive level.
- Space economy: 12 channels with common equipment, 26¼" high.
- Variety of signaling options.
- Frequency allocations so arranged that 661/665 equipment can be applied to existing transmission systems.
- Optional compandors keep costs at a minimum.

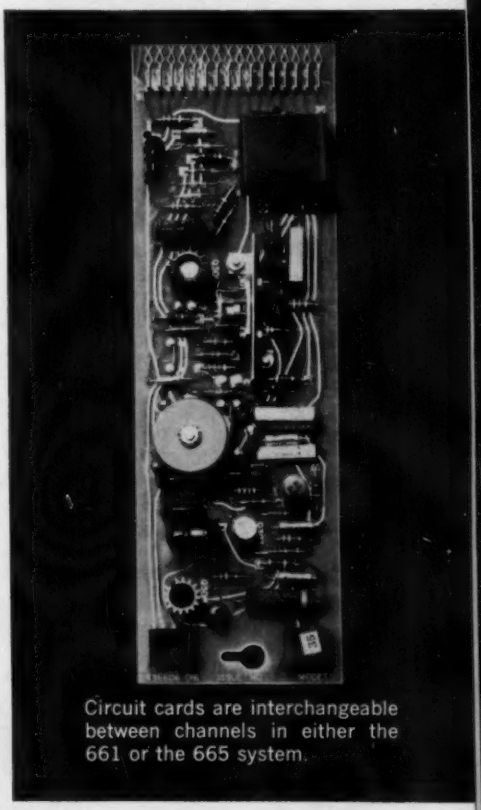
*661 Carrier: options easily added with plug-in modules:*

- Standard ringing options—bridged, divided, frequency, superimposed, coded.
- Optional standby power for subscriber terminals or repeaters.
- Weatherproof terminal housings.

*665 Carrier: options easily added with plug-in modules:*

- Two- or four-wire operation.
- E & M signaling; loop signaling (on one-way circuits) to provide direct selector-level access.

The 661 Carrier for expansion of service on existing subscriber facilities and the 665 Carrier for extra trunk circuits between central offices are your best buys in carrier equipment. Ask your Stromberg-Carlson representative to prove it. In Atlanta, call: 875-7467; Chicago: STate 2-4235; Kansas City: HArrison 1-6618; Rochester: HUbbard 2-2200; San Francisco: OXford 7-3630.



Circuit cards are interchangeable between channels in either the 661 or the 665 system.

GD

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STROMBERG-CARLSON PRODUCTS: THE STANDARD OF QUALITY SINCE 1894

# FLASHES AND PLUGS

**BE KIND TO RUPTURED EARS!** Even back in 1881, the residents of Stockton, Cal. (now served by the Pacific Telephone & Telegraph Co.), to whom the telephone was but a novelty, had strong feelings about ear-bombarding telephone voices.

In that town, there were but three business subscribers, a drugstore, the bank and a saloon. The Stockton "Independent", that year, published a personal plea by one whose ears, no doubt, had suffered. Said the "Independent":

". . . a man with the lungs and voice of a thunderer himself will occasionally exercise his vocal powers over the lines in direct opposition to instructions, and cause not ony the eardrums of some of our prominent merchants and residents fairly to crack with his resonant tones, as transmitted through the very sensitive telephones, but sometimes to endanger the safety of the telephones themselves."

"Speak in an ordinary tone," implored the paper, "and don't try to crawl into the mouthpiece of the transmitter while so doing."

•

**DEFER DESTINY'S DATE.** A Liberal, Kan., man put in telephone calls to get an appointment for his wife with a doctor.

Later, he found that two appointments had been made. He had to cancel one, so he telephoned again.

"I would like to cancel the appointment my wife has there this morning," he said.

There was long silence, then a woman's voice said:

"This is the Campbell Funeral Home."

•

**CHIEF OUGHT-TO-BE-RED-IN-FACE.** The Scotchman wanted to send a telegram to his wife, and the girl at the desk told him there was no charge for the name.

Whereupon, the sly Scot put down his pencil, and said, "I may not look it, but I'm an Indian, and my name is 'I-won't-be-home-until-Saturday-night.'"

•

**HOW ABOUT NUMBER SYSTEM?** The AP reports the birth of a 13th child to a Des Moines, Ia., couple, who immediately named the new son "James".

Apparently, the parents had a conference, for shortly, the father telephoned the doctor and asked him to change the baby's name to "Kenneth" on the birth certificate. "We find we already have a 'James'," he said.

•

**SMUDGE, SLIM, OR HAPPY.** The directory of the Bermuda Telephone Company, Ltd., lists 239 Smiths. To help keep readers straight, however, the directory specifies that the Alfred Smith who lives on Longford Mews in Warwick is really Smudge Smith; the J. A. C. Smith of Ewing St., Hamilton, is Jack and not to be mistaken for J. M. of Coralair in Warwick, who is Joseph; or St. George's O. C. Smith, who is Slim; or Pembroke's Wentfield Smith, who is Happy.

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# Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

SINCE 1901

**April 21, 1962**


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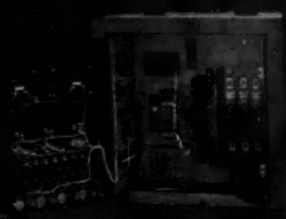

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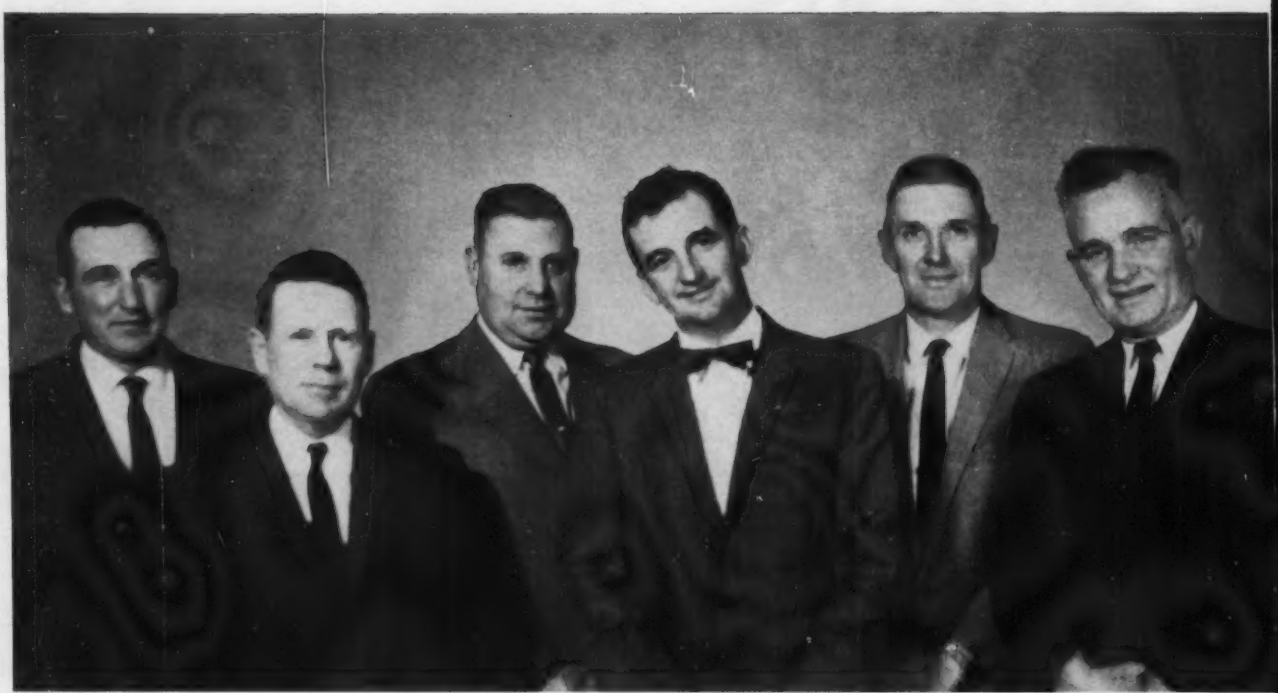
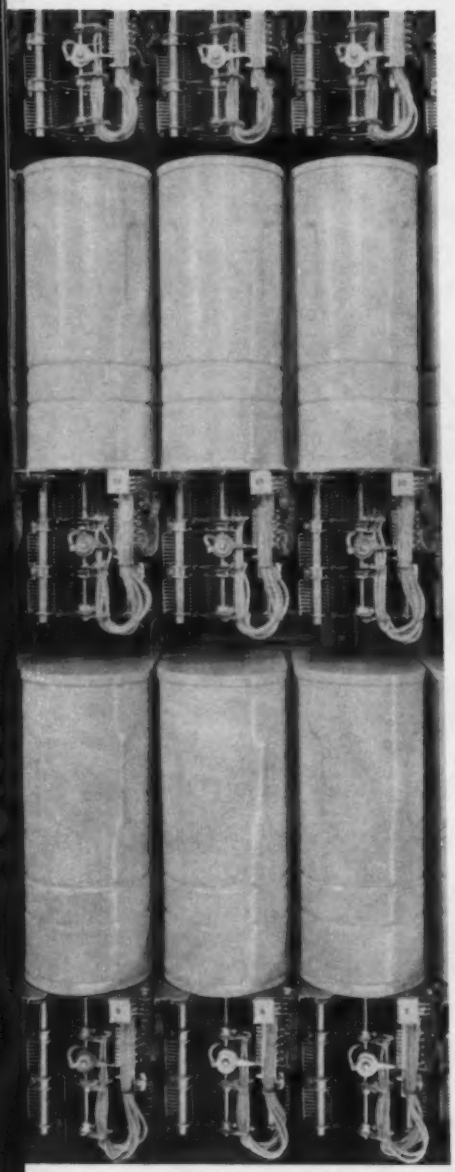


BOARD OF DIRECTORS AT SHARON TELEPHONE COMPANY REPORTS

# "We give customers better service since converting 500 stations to AE dial"



THE horse-and-buggy days are not entirely gone—at least in Sharon Center, Iowa. That's because the Sharon Center area is home for many Amish who still travel in this manner. It's also home for the up-to-date Sharon Telephone Company, which serves a 10 square mile area.

During the past decade, Sharon's station total steadily climbed. And traffic jumped. More people were calling more often. But while business was picking up, Sharon's manual equipment was letting down. Service was slower. Calls were backing up. Traffic volume had become too much for two hands.

Roy Meer, member, board of directors of Sharon Telephone Company, explains the situation this way: "Your exchange equipment makes up a substantial part of your invested money. So, it must be reliable and efficient. It must protect your investment against changing conditions." Then, he quickly added: "Our manual equipment wasn't doing any of these things."

Obsolete equipment wasn't the only problem. Sharon Center citizens were aware that the adjoining town already had dial service. Still another problem was higher operators' salaries. Labor was the biggest factor in Sharon's operating costs—and increased traffic would require more operators.

Sharon Telephone Company was ready for dial—and Nick Brooks, AE representative, thought he could help. At a meeting of the board of directors, Nick presented the advantages of AE dial equipment. He talked about savings: "Dial cuts labor costs. You operate at less per station per year than with manual equipment." He talked about service: "Dial handles volume traffic faster and better 24 hours a day." He talked about the future: "You can expand a 100-line exchange to whatever size you need without scrapping any of the original equipment." The board was sold on dial —and on AE dial in particular.

A special meeting of stockholders was called. Nick was invited to attend and help explain the program to the stockholders. The vote? Unanimous in favor of converting Sharon to AE dial. The directors gave three reasons for choosing AE: "We knew AE's broad experience in the field of dial conversion was unmatched by any other company. We knew their reputation for quality. And we knew they stressed service."

When converting to dial, planning your outside plant is of utmost importance. Here, AE specialists paved the way for Sharon. They assisted in making a complete layout, and specified type and gauge of cable. They selected the circuits that would best serve Sharon. Loading schemes and repeater applications were formulated for the complex circuitry. They also gave instructions on splicing, supporting and terminating cable.

Meanwhile, Nick Brooks was helping Sharon in the area of public relations. Together with Sharon and fire department personnel, a special fire-reporting system was developed. Only the fire department—not the community—would be alerted to a fire, thus preventing traffic congestion at the fire. Nick also helped the telephone company do a sales job with its two biggest business subscribers, the bank and a feed company. He helped sell both companies on the advantages of a 10-A1 business communications system. AE engineers planned Extended Area Service (EAS) to three nearby towns.

In the months that followed, Nick, and the AE team behind him, helped Sharon over many hurdles. They assisted in preparing a new directory. Made traffic surveys. Helped negotiate a loan through the AE finance plan. In addition, Sharon technical men were sent to AE's free Training School to learn the operation and maintenance of dial equipment.

On November 27, 1961, Sharon Telephone Company cut over to dial. Today, it serves 500 stations. One board member summed up the feeling of Sharon Center about dial: "Our customers know they have the finest telephone service available. And we know we have the finest dial equipment money can buy."

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GENERAL SYSTEM

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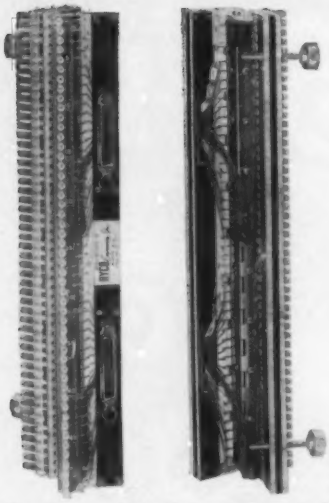

50 TYPE FRONT TAP SHOE

**FRONT TAP SHOES**

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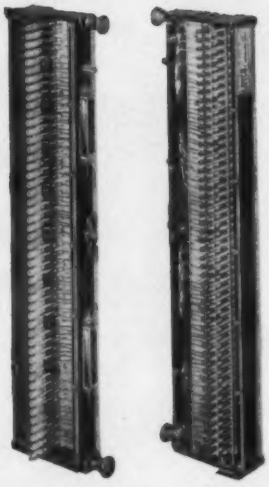
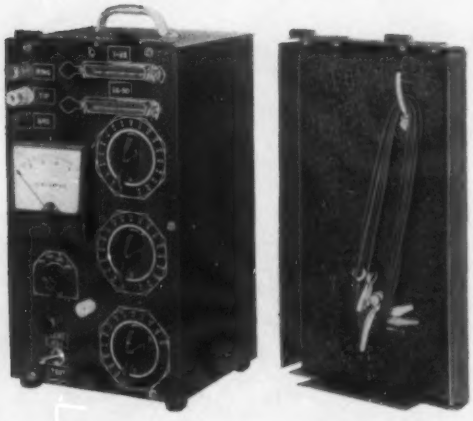


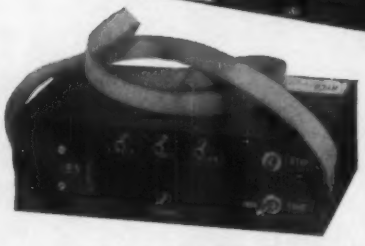
300 TYPE FRONT TAP SHOE

INTERMEDIATE CONNECTING CABLE



CABLE PAIR TESTER

OFFICE UNIT



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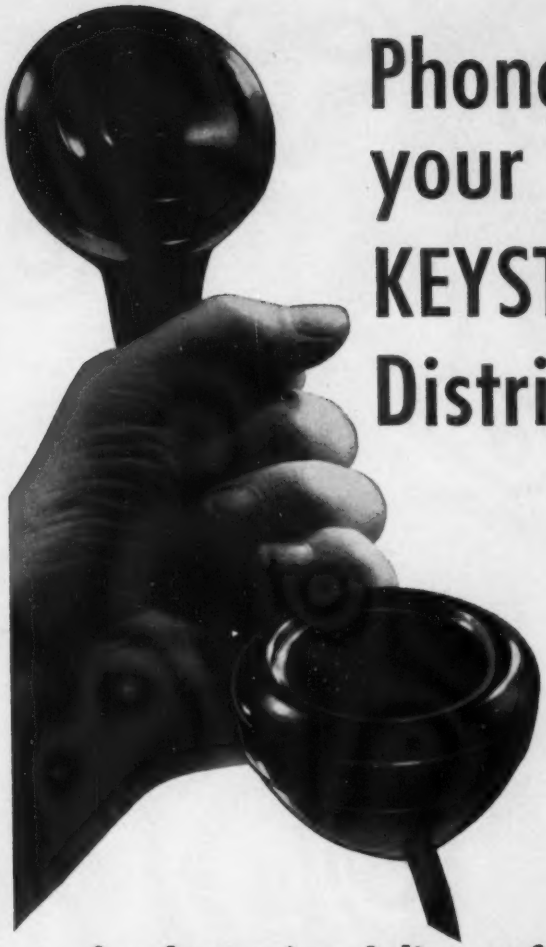

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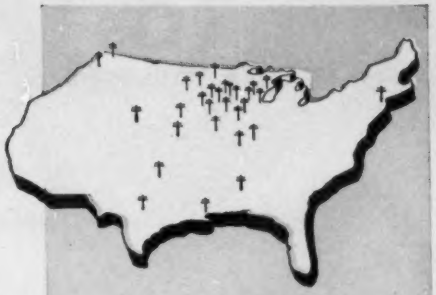

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Quincy, Illinois
Rapid City, South Dakota
Sioux City, Iowa
Sioux Falls, South Dakota
Spencer, Iowa
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**Dakota Electric Supply Co.**
Fargo, North Dakota

**Joslyn Mfg. and Supply Co.**
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Chicago, Illinois
Dallas, Texas
New Orleans, Louisiana
New York, New York
No. Kansas City, Missouri
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**Midwest Telephone Supply, Inc.**
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**Nelson Electric Supply Co.**
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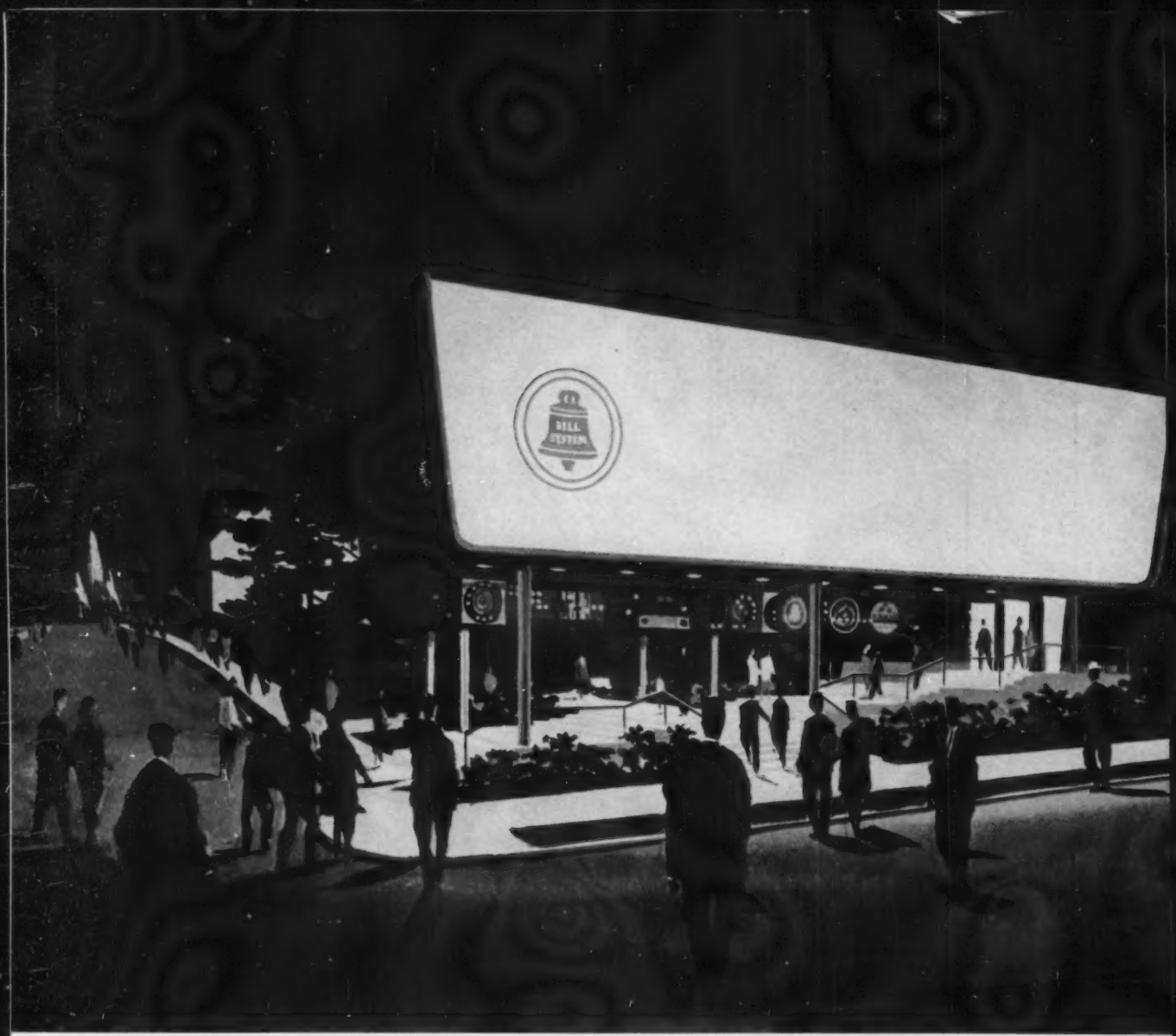



Artist's conception of the Bell System exhibit shows large, high-ceilinged central auditorium flanked by multi-leveled display wings.

# Bell System exhibit at Seattle World's Fair to show telephone industry advances

One of the highlights of the forthcoming Seattle World's Fair will be the Bell System exhibit.

Here, in an ultra-modern building, visitors will get an eye-opening look at what's available in telephone service now, and what's coming in the future.

Special displays will show residential and business equipment . . . communications by satellite . . . the development of transistors and solar batteries and their uses. Among the services to be demonstrated will be push-button calling, Direct Distance Dialing, and data transmission.

The Bell System exhibit will, in a very real sense, represent the telephone industry as a whole to millions of fair goers. We hope you'll be pleased with it. See it in Seattle from April 21st to October 21st.

**Bell Telephone System**

## FOR COMPACTNESS AND VERSATILITY

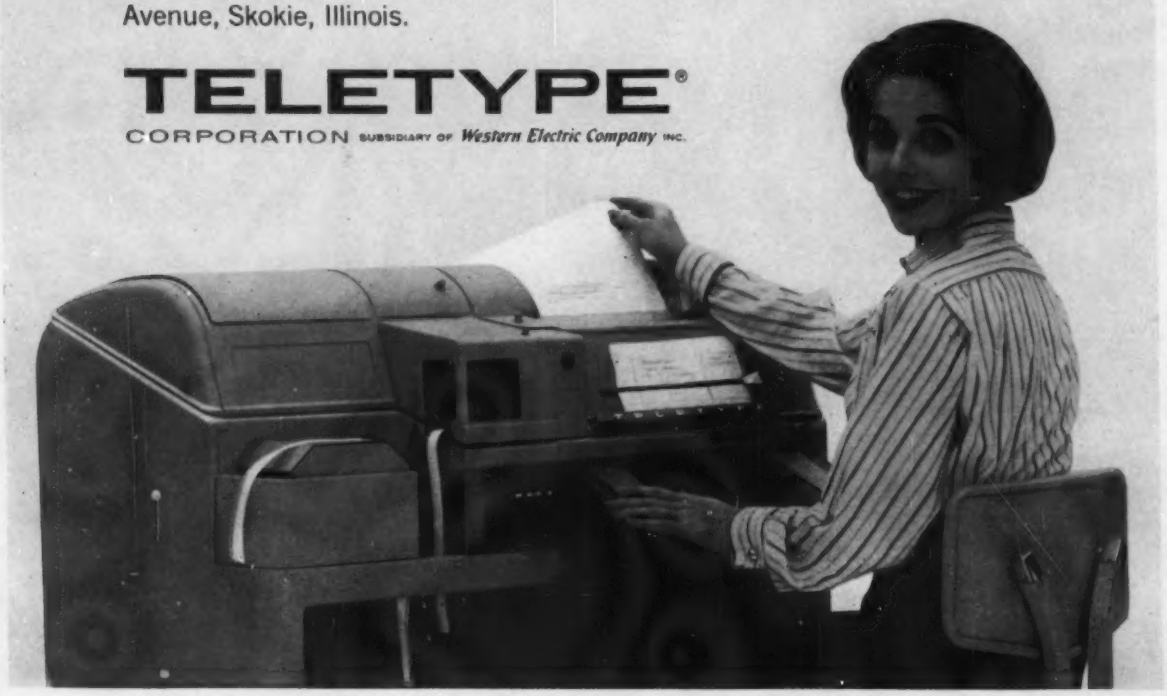
The Teletype Model 28 ASR set offers an unusually versatile combination of facilities in a console smaller than the average office desk. The ASR features a send-receive page printer —using either message paper or sprocket-fed forms for communications, record preparation or readout. Punched tape facilities are provided for encoding data into tape (with or without printing on the tape)...transmitting from tape ...receiving in tape...integrating repetitive data from previously prepared tape with variable data by keyboard. Parallel output to business machines is optional. The set also includes the Stunt Box, a built-in programming mechanism that offers an inexpensive and space-saving solution to a wide variety of remote control and switching problems.

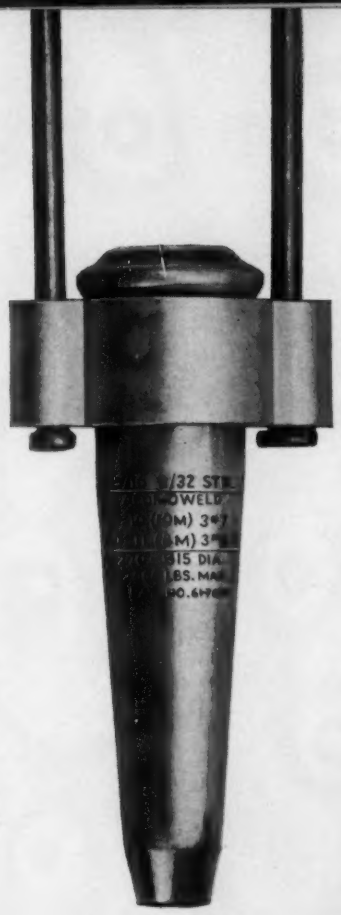
The Model 28 ASR can be used with DATA-PHONE or other communications services. Teletype Corporation manufactures this equipment for the Bell System and others who require the utmost reliability from their data communications facilities. For descriptive literature, write to Teletype Corporation, Dept. 65D, 5555 Touhy Avenue, Skokie, Illinois.

IT'S A MATTER OF RECORD

**TELETYPE®**

CORPORATION SUBSIDIARY OF *Western Electric Company* INC.





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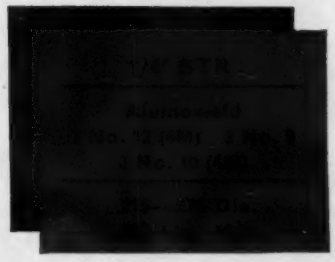

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# IN THE NATION'S CAPITAL

BY LAWRENCE J. HOGAN, WASHINGTON EDITOR
and President, Larry Hogan Associates,
Public Relations Firm.

**AT&T executive stresses need for satellite communications legislation at this session of Congress before Senate committee. . . . Tells advantages of private ownership. . . . Government ownership advocates also testify. Utilities disagree on tax credit.**

JAMES E. DINGMAN, executive vice president of American Telephone & Telegraph Co., told the Senate Commerce Committee on Apr. 12 what we have stated repeatedly in this column: It is imperative that satellite communications legislation be enacted by *this* session of Congress.

Dingman said postponement of legislation could "deprive the U. S. of the initiative in this field in which it now holds the lead." He labeled as "sheer nonsense" allegations that a proposed satellite communications corporation will make large profits on research paid for by the government. He said that the corporation "will pay for everything it gets"; lose money for a substantial period; and, as a regulated utility, earn only a reasonable return on plant investment.

### Industry Develops Components

Dingman pointed out that the lead which the United States now has in satellite communications is principally in the vital communications components, such as transistors, masers and solar batteries—"all of which are products of privately financed research done by our communications industry."

Dingman described as "nonsense" the claims that communication companies might retard development of satellites because such development would obsolete the companies' present overseas facilities. He told the committee that a satellite system would supplement the existing world-wide communications network and would "provide added security and reliability."

Dingman advocated the ownership and operation of ground stations by the communications companies because they are now responsible for the operation of the current communications network. He said that divided responsibility for operation of the ground stations "will prove impractical and will degrade service to the public."

He called for ownership of the proposed corporation by communications companies and disavowed any "motive or intent" by AT&T to dominate the new corporation. He said that "no carrier should be allowed to control the board of directors" and that "there should be appropriate governmental regulation" to prevent any company from gaining "any competitive advantage from its investment in communications satellites."

Dingman called for the "establishment of an operable communications satellite program at the earliest practicable time." He told the senators that "this is of paramount importance and transcends all other considerations."

### U. S. Should Initiate System

"It is well recognized," Dingman said, "that we in this country cannot unilaterally construct a communications satellite system and impose it on our foreign friends. They will wish to participate in ownership of the satellite system. Their agreement must be obtained with respect to its technical specifications. They will also provide the ground stations within their borders which will receive from and transmit to the satellites. But as was done in the case of existing overseas radio and cable communications facilities, we can initiate the program and, through our technical competence and leadership, bring this new international communications facility into being.

"The magnitude of this task is very great. It will require an organization having technical competence of the highest order, and this competence must be recognized both here and by the communications agencies abroad. Expertness in the communications art must be accompanied by a thorough understanding of the communications business and an ability to deal with our foreign counterparts with respect to the many intricate commercial and technical arrangements which must be made.

"Above all, the organization must be service minded, must sincerely believe in the objectives of the whole program and must be willing to take the very real risks inherent in the speedy establishment of this new and untried communications facility. There can be no conflicts in objectives within this organization, no over-abundance of caution, no penny-pinching spirit. This organization must also be free, under appropriate regulation, to exercise initiative and leadership and to move forward promptly.

### Testifies on Bills

"It is with these basic thoughts in mind that we have carefully and objectively examined all the proposals contained in the pending bills for the organization, financing anl operation of the United States interest in the proposed system. Briefly, as I testified before the Committee on Aeronautical and Space Sciences, our principal comments on S. 2814 as originally filed were:

"**First**, we believe that the ownership of the stock in the proposed satellite corporation should be limited to communications carriers approved by the FCC to own shares of such stock, as is provided in S. 2650.

"**Second**, we believe that the ground stations (referred to in S. 2814 as 'satellite terminal stations'), which transmit and receive communications signals to and from the satellites, should be owned and operated by the carriers and other authorized users and not by the corporation."

". . . A satellite communications system would be uniquely suited," he

told the senators "to expanding service to the developing areas of the world. It would provide added security and reliability, both by making available alternate routes and by affording direct access to those areas which are now reached only by means of either high frequency radio, which is subject to sun-spot interference, or by intermediate land links through other countries."

He said that communications satellites will not constitute a communications system in themselves, but will merely serve as an intermediate link in a system that provides complete communication service. "The degree of their usefulness in providing communications services," he said, "will depend upon their proper integration, on an economically sound and operationally efficient basis, in the vast complex of domestic and international common carrier facilities."

Sen. Russell B. Long (D., La.), a firm supporter of government ownership and control of the space satellite communications system, charged that the Federal Communications Commission in its 28-year history has neither been able nor willing to regulate effectively interstate or international telephone rates.

### Says FCC Fails in 10 Areas

Senator Long, chairman of the Monopoly Sub-committee of the Senate Small Business Committee, in testimony presented before the Kefauver Judiciary Sub-committee, said "to depend upon the FCC to protect the public interest in this field constitutes either extreme naïveté or self-delusion."

The Louisiana senator who has voiced objection to ownership of the communication satellite system by a combine of communication common carriers, pointed out 10 specific areas where the FCC has failed to act. He also charged that the bills, S. 2650 and S. 2814, creating a special exemption from the anti-trust laws, would overturn long-standing congressional policies.

He further stated "that allowing the communications carriers to participate in the ownership of the satellite system would be contrary to the statutory policy of the Interstate Commerce Commission and the Civil Aeronautics Board in prohibiting common ownership of competing modes of transportation, which would tend to lessen competition in the transportation field." The senator testified that ownership of the system by the communications carriers would prevent participation by the small business community in this broad area of our economy.

Long continued: "If, as under S. 2814, the communications carriers own 50 per cent of a satellite communications corporation, we can reasonably assume that the manufacturing divisions or subsidiaries of the carriers will be providing most of the equipment."

The senator concluded that the FCC has been unable or unwilling to bring about competition in the purchase of equipment by the communications carriers, although the commission does have the authority to do so.

Assistant Attorney General Nicholas deB. Katzenbach testified that the compromise communications satellite bill could give control of the system to the communications industry. He said the bill might hold back development of the system. Katzenbach criticized a section in the bill that encourages the establishment by private companies of sending and receiving stations for the system.

### Ground Stations Control

"We recognize," he said, "that the carriers, having consistently opposed public participation in the ownership of the system, may feel that even with public investment they can still control the system if only they can control the ground stations." He mentioned that the system could be developed faster if the ground stations were owned only by the private corporation that operates the system.

In commenting on the section of the compromise bill which directs the FCC to "encourage the establishment and maintenance of ground stations by communications common carriers," Katzenbach said, "There is a real danger that ground stations, if separately owned by the carriers, may because of their high cost, represent an obstacle to technical growth so as prematurely to freeze the type of system."

In testifying before the committee, Federal Communications Commissioner T. A. M. Craven said he has been in touch with representatives of various countries about a world-wide communications satellite system. In talks with the Russian representative, he said, "I was encouraged with the feeling they could cooperate with us."

### Minow Testifies

FCC Chairman Minow testified the legislation should be amended to: (1) Give the FCC authority to enforce competitive bidding in the satellite corporation's purchase of equipment; (2) provide tightening and more flexible commission authority to regulate the corporation's rate of return, and (3) make it clear that the corporation would be subject to the anti-trust and fair trade laws.

National Association of Manufacturers witnesses, Daniel W. Cannon and Frank M. Smith, said in a joint statement that the NAM was strongly opposed to government ownership of the system and feels that private ownership is best. They did not take a stand, however, on who should own the private corporation operating the system. The NAM spokesmen did say they felt the bill before the committee went too far in giving the government sweeping regulatory power.

Morton Langstaff, executive manager of the National Telephone Cooperative Association, said his group feels that "at least for the immediate future the system should be owned by the government and its facilities leased on a non-discriminatory basis to all authorized communications common carriers." Langstaff said he feared the bill before the committee would allow one large communications company to "dominate and exercise an absolute monopoly over the coporation, and the system as a whole."

### CWA for Private Ownership

Joseph A. Beirne, president of the Communications Workers of America, said his group felt private ownership is "the most desirable and practical means of getting on with the job" of developing space communications. Beirne said he favored ownership entirely by established communications companies, but "we have no strenuous objections—I emphasize 'strenuous'—to the half-and-half ownership bill."

Rep. Emanuel Celler (D., N. Y.) told the Senate Anti-trust Sub-Committee that FCC permitted AT&T to overcharge long distance telephone users 985 million dollars. He said FCC negotiated a rate decrease of 65 million dollars in 1953, feeling that 6.5 per cent was a fair return on net book value. He said that even though rate decreases have been negotiated, Bell's earnings never fell below 7.3 per cent.

Rosel H. Hyde, testifying for FCC, denied the charges. He said it would be inappropriate for a regulatory agency to freeze earnings at a certain level. He said that AT&T's rates were not unreasonably high. He pointed out that the cost of borrowing money and costs of other services had increased since 1953.

The bill, unanimously approved by the Space Committee, is now pending before the Senate Interstate Commerce Committee. The House Commerce Committee has not yet approved a satellite communications bill.

*(Continued on page 42)*

# The Change and Challenge In Communications Ahead

*By Robert F. Mundy**

I WELCOME the opportunity to speak to you as the National Capital Chapter of the Independent Telephone Pioneer Association. The reasons are threefold:

First, because I know most of you personally or have been associated with you in the past.

Second, because you have in your membership the majority of government communicators in the Washington area and also representatives of many of the major electronic industries.

Third, because you will exert tremendous influences in the exciting era ahead as the leaders of government in the area of communications-electronics, and as representatives of industry supporting these leaders.

The flier announcing this luncheon indicated my subject generally would be the development of the Federal Telecommunications System (FTS). After looking over the roster of persons attending, I have concluded that many in the audience have heard the FTS story in some form or other. I felt, therefore, I could take the liberty of discussing communications-electronics in the era ahead and the FTS as a move forward for civilian agencies of government into this era.

### Golden Age of Electronics

The era ahead which has been defined as the Golden Age of Electronics, is an era of great expectation electronically. It is an era that will be characterized by change and challenge. Innovations will become common in efforts to better man's environment. Communications will be in the forefront as new and novel uses are found to command and control this environment.

The speed at which we progress into the Golden Age will be dependent on a number of factors. Chiefly among these will be the continual threat to our national security. These external pressures force a compression of time and provide a sense of urgency and a will to create.

The FTS is but one example of many, for the system was conceived as a means to improve the civilian agencies' capability during emergencies although the day-to-day operating improvement to agencies will more than justify its existence.

Other factors influencing our speed into the Golden Age are the population explosion, and competition both domestic and foreign. At the present rate of acceleration I predict that we will reach the threshold about 1975 at which time electronics will dominate our lives.

### The Past of Electronics

I would now like to take a few moments to establish our position today. Let us, therefore, review a few of the more significant developments leading to our communications-electronics world of today after which we might look to the future.

The courtship of electronics and communications has been gradually progressing from the time Lee DeForest discovered the triode in 1906 to the present-day state of the art in the electronic field as characterized by today's complex weapon systems. As an industry, electronics has progressed from a small beginning in 1922 to an 11 billion dollar industry in 1961. The communications share in 1961 was 3.2 billion dollars.

### Important Culture Factor

During this period some have witnessed the development of communications from an engineering novelity to one of the most important factors in our culture.

Starting from the decade 1912 to 1922, one saw the establishment of cascade receiver tuning and the use of the superheterodyne receiver, long distance radio-telephony and the establishment of commercial radio broadcasting.

In the next decade from 1922 to 1932, one saw such events as practical facsimile, transmitting of TV signals, and the development and installation of automobile radios.

The decade from 1932 to 1942 was marked with such events as the use of metal tubes, the development of radar, and loran, the development of frequency modulation and the use of Hi-Fi sets and magnetic tape recorders.

### Transistor Developed

The decade from 1942 to 1952 saw the development of the transistor and subsequent development of the semiconductor industry, the development of the electronics computor and an all-electronic TV system.

During the decade from 1952 to the present there occurred such things as the use of magnetic core memories, the development of the solar battery, the use of tropospheric scatter systems, the development of the tunnel diode, the availability and use of maser and parametric amplifiers, and the first satellite communication system.

### Future of Electronics

We have now looked at the past and have seen the rapid progress made to date in electronics. As we step forward, I again repeat that the acceleration of new ideas, techniques and facilities will increase at an astounding rate. The use of electronics will more and more effect our daily lives. The scope of electronics can be expected to pass all other branches of science since the obtaining of maximum benefits in other branches will require electronics as a partner. Now, then, let us speculate on some of the trends we might be seeing in the future for electronics in general and communications in particular.

Communication and control systems will become more sophisticated and complex so that man as an instrument of control will become outmoded. This will be accomplished by the integration of computers and communication facilities. In fact, the relationship of man and machine will rapidly change. At one time, man was the master of his machine and, therefore, was the vital element in the over-all operation of his system. The rapid advancement of the digital computer and its incorporation into systems never envisioned before, has started a trend to supplement or replace men in the traditional decision making functions that they now perform.

*Mr. Mundy is Assistant Commissioner for Communications of the federal governments' General Services Administration. He presented this address at the Apr. 4 meeting of the National Capital Chapter of the Independent Telephone Pioneer Association.

How can man with his slow reaction time and the limited scope of his senses control these complex systems? The answer is obvious, he cannot! Therefore electronics must play the key role.

Computers will become faster and faster enabling them to react instantaneously. At that time, the manner of conducting day-to-day operations will change. Management will have to be reorganized from the classical pyramid structure to a radically new multi-level structure. This will be required for information to flow in many new directions. Executives will base decisions upon timely machine "digested" information and computer derived recommendations. Simulated models of organizations will be constructed to include not only the accounting and economic factors, but also the philosophy of top management and other psychological and behavioral concepts. Individuals in the organization have aspiration levels, feel pressures and react accordingly. All of these factors play an interconnected role in our society and, therefore, none can be neglected.

### Capable Decision-Making

The over-all purpose of the model is to study the effects of informational and organizational factors upon the decision making capability. Just as atomic reactors are today designed by computer, so will the firm of the future be designed. The over-all advantage of this technique is that each time a new factor enters the picture, such as a new competitor, the firm can be reorganized to meet the challenge.

Until recently, computers have been unable to do anything that they were not told to do. In the near future, computers will learn to not only make unique decisions but they will make "discoveries" and produce new formulas and theories which are not known to man today.

### Applications in Government

In the field of government, electronics will continue to grow for greater efficiency and economy. For example:

Greater centralization of data processing by marrying computers and communications will take place.

Strong pressure will be exerted for consolidation of data processing into fewer but larger centers.

Increased use of information storage and retrieval methods coupled with communications will find greater use in day-to-day operations for such applications as storage and issuances of department and agency orders, bulletins, etc.

In the field of business the volume of business data will increase a thousandfold. Transmission speed ranging from 300 characters per second to over one million characters per second will be common. All sizes of businesses will find it economical to utilize data transmission as their prime source of communication. An integral part of this system will be the voice-to-digital and digital-to-voice converters. Information will no longer have to be placed in punch cards or punch paper tape. The user will merely dial his telephone and talk. The receiving party will have the option of hearing the message, having it printed, or both.

In the field of transportation, use of complex traffic control systems to regulate auto traffic will become widespread in the next several years.

### Will Play Role in Science

More and more dependence will be put on completely automatic pipeline control systems by both oil and gas companies. The railroads will look more and more to electronics to speed up train movements, increase safety and cut costs.

In related branches of science and technology, electronics will play a major role. For example:

In the field of power generators, we will see a change toward the use of fuel cell to provide our electrical power.

In the field of atomic energy, radical new ways will be developed to control the fission and fusion processes to allow greater use of this powerful source of energy for both earthbound and space endeavors.

### To Lighten Man's Burden

In the field of automation, electronics will more and more control the devices to lighten man's burden. More and more inroads will be made into agriculture and industry.

In the field of heating devices, electronics will heat and cool our homes and offices as well as to protect our health by selectively killing harmful bacteria.

In the field of lighting systems, electroluminence will be built into the walls with provision for changing their color at will.

In the field of medicine, hospitals will lean toward more automatic equipment so that less personnel will be necessary although the patient receives constant attention automatically. Many phases of the physical examination will be conducted by equipment in a fraction of a second. Remote examination of patients via communications will become common-place. Centralized diagnostic centers will allow a comparison of case histories and quicker diagnoses. All of these advancements will help relieve the doctor shortage and allow more medical manpower for research.

### Use in Weather Forecasting

In the field of meteorology, long-range world wide electronic weather forecasting and the capability to divert storms will cause fewer natural disasters.

In the field of education, the marriage of electronics and psychology in the teaching machine will allow proportionately fewer teachers to teach faster and better.

No area of man's endeavors will be unaffected. Just as the doctor of tomorrow will have to do a portion of his undergraduate work in electronics, so the communication man of the future will need a broader base of electronic knowledge.

### Individual Challenge

What is the challenge of this era to us as individuals? We, as pioneers, must be prepared to accept the changes of new ideas, trends, and concepts. We must condition ourselves for this by continuing our quest for knowledge. In this age there will be no standing still—one must advance or be left behind. The basic tools to advance our position is an understanding of total communication systems even though one may be a specialist in one area of telephony or telegraphy. Total systems will include special types such as data processing and computer, test-instrumentation, command and control and simulation.

To understand these systems and logically develop them, one must have an understanding of the functional elements that comprise a system. These include, but are not limited to, amplification, transmission of signals, signal generation, modulation, demodulation, waveform control, signal attenuation, coding and decoding, recording and signal display.

### Need Basic Electronics

An understanding of these functional elements are dependent on an understanding of basic electronics to include, but not limited to, electron emission, electron optics, electromagnetic propagation, information theory, network theory, solid-state theory, environmental effects, systems theory, human factors, reliability theory, and electronic measurements.

Coupled with this quest for knowledge is the need to accept authority commensurate with our responsibility

and impart the maximum of both to your subordinates. Essential to this delegation is the requirements to encourage and exhort our fellow employes and subordinates.

### FTS Step to Future

Now that we have explored a few of the things we can expect in the future and the challenge that confronts the individual, I would like to provide you with a sketch of the Federal Telecommunications System program as a step to this future. Although the FTS is a giant step forward by today's standards you can see by what lies ahead that it is not a means to the end but only a beginning. I feel that the successful completion of this program in the three-year time frame is a necessary step to make future objectives and ideas easier to attain. . . .

I have been queried on a number of occasions as to why we have not provided greater publicity. For us this is simple. Until recently we basically have had nothing to publicize but plans. This, however, is rapidly being overcome as we move forward.

The Presidentially approved Federal Telecommunications System envisions an automatic communications system for both peacetime and emergency use to provide civil government agencies the maximum of station-to-station and machine-to-machine services. The agencies in turn will receive substantially improved communication services for telephone, teletypewriter, facsimile, telephoto and data operations.

### Plan Maximum Flexibility

Maximum flexibility is being engineered into the system in order to meet ever changing conditions whether day-to-day, cold war or national emergencies. This flexibility will be attained through a complex of automatic circuit switch and store and forward switching centers which will be integrated into a unified network. This will provide record communication subscribers with a choice of point-to-point or store and forward service and language translation capability, primarily for data.

This system will be leased from industry and will be interconnected with a grid of circuitry which will take maximum advantage of protection and diversity of routings to assure reliability of service.

### Free Flow of Information

A free flow of information to and from the military services and commercial facilities will exist. Because of its automatic nature, the basic system will be available 24 hours a day, seven days a week. It will extend to approximately 355 geographical areas where civil agencies are concentrated. It is significant that approximately 87 per cent of federal civil agency offices are located in or near to these 355 areas.

Of special interest to this group in the area of improved telephone service is our recent letter of intent to the American Telephone & Telegraph Co. requesting the installation of *Phase I* of the FTS circuit switching network. This phase of the system contemplates the establishment of four four-wire switching centers interconnecting 47 of the major metropolitan areas of the United States.

### DDD Planned

Associated with this network is the consolidation of switchboard facilities within these areas so that upon completion about March, 1963 government subscribers in these areas will be able to dial direct to other subscribers in these same areas. Control of the facilities will initially be made by an originating operator who will procure necessary accounting information prior to providing systems dial tone. *Phase I* can also provide high grade 3KC facilities on a switched basis for teletypewriter, facsimile, and data. Planning is continuing for the expansion of this network by adding additional switching centers. The maximum capacity would include the serving of the 355 areas where government activity is concentrated.

### Progress in Other Areas

Some of the progress in other areas to date includes:

- Expansion of our present record communications network to meet the 40 per cent increase in teletypewriter traffic since this program began.
- Installation of common-use data transmission equipment at Boston, Washington, and Chicago to provide a capability to handle 1,200 bits per second data between these areas.
- Institution of direct dialing by subscribers over government leased facilities from Washington to New York, Philadelphia, Boston, Chicago and Atlanta.
- Installation of large quantities of

*(Continued on page 43)*

## Convention Calendar 1962

| *Association* | *Date* | *City* | *Hotel* |
|---|---|---|---|
| Wisconsin | May 8 and 9 | Milwaukee | Plankinton |
| Indiana | May 9 and 10 | Indianapolis | Claypool |
| Kansas-Missouri* | May 21 and 22 | Kansas City, Kan. | Town House |
| Illinois | May 24 and 25 | Springfield | Abraham Lincoln |
| Pennsylvania | June 4, 5 and 6 | Bedford | Bedford Springs |
| New York | June 11, 12 and 13 | Whiteface | White Face Inn on Lake Placid |
| California | June 13 and 14 | San Francisco | Jack Tar |
| Washington Oregon* | June 21 and 22 | Portland, Ore. | Sheraton-Portland |
| Tennessee | Sept. 5 and 6 | Nashville | Hermitage Hotel |
| Arkansas | Sept. 10 and 11 | Hot Springs | Arlington Hotel |
| Nevada | Sept. 11, 12 and 13 | Sparks | Sparks Nugget |
| Georgia | Sept. 13 and 14 | Jeckyll Island | Corsair Motel |
| Michigan | Sept. 18, 19 and 20 | Lansing | Jack Tar |
| Rocky Mountain | Sept. 19, 20, and 21 | Salt Lake City, Utah | Hotel Utah |
| West Virginia | Sept. 24 and 25 | Wheeling | Oglebay Park |
| North Carolina | Sept. 30, Oct. 1, 2 and 3 | Pinehurst | Carolina Hotel |
| New England | Oct. 1, 2 and 3 | Poland, Me. | Poland Spring Hotel |
| USITA | Oct. 22, 23 and 24 | Chicago | Conrad Hilton |
| Virginia | Nov. 8 and 9 | Roanoke | Hotel Roanoke |
| Alabama-Mississippi* | Nov. 12 and 13 | Birmingham, Ala. | Thomas Jefferson Hotel |
| Oklahoma | Nov. 14 and 15 | Oklahoma City | Skirvin |
| Florida | Nov. 25, 26 and 27 | St. Petersburg | Tides Hotel & Bath Club |

*Joint meeting

# Material Costs Cut $5,000 in Ohio Bell Reproduction Work

By CHARLES SHERIDAN*

OFFSET DUPLICATING material costs have been cut roughly $5,000 a year in the reproduction department of the Ohio Bell Telephone Co.,—thanks to a new method of producing inexpensive paper plates for offset reproduction. In addition, the system has provided hefty additional bonuses in speed and efficiency, permitting better employment of personnel (See photos on next page).

The figures are the result of a detailed analysis of comparative costs for our previous process and the present use of a system developed by the Eastman Kodak Co., called the Ektalith Method. Material costs are based on inventory figures and, therefore, include any waste or spoilage.

**DURING THE** survey period, from Aug. 1, 1960 to July 30, 1961, our department used materials costing approximately $7.000 for the production of the paper masters. Computation of what the same work-load would have involved in material cost, had we continued with the previous process, resulted in the alternate-method cost estimate of $12,000.

In addition to the $5,000 saving in materials revealed by this analysis, labor-time equivalent to that of one skilled employe plus was also saved.

We formerly used a full-time plate maker in the department. He has been released for other duties. The photographers are now preparing this type of plate and are furnishing it far enough ahead to permit efficient scheduling and usage on the offset duplicators.

**WHAT IS MORE**, the total savings will be increased because during the early part of the survey year we were producing some jobs on the old process that could have gone on Ektalith masters, but we were attempting to bring our inventories into proper balance. After that was accomplished, during the period from April to July 1961, of a total of 10,537 offset plates we produced and ran off, 9,883 were Ektalith paper masters.

This will probably be the normal ratio in the future. The metal plates are used for frequently recurring runs or extremely large quantity orders. The Ektalith masters are used for all other jobs. Because of their low cost, they are discarded after the run, eliminating filing problems.

Because of the reduced-cost factor, we also expect to open up new areas of utility for the process, increasing the department's total output with an end-result of increased savings.

**CAREFUL** quality-control checks have convinced us that the quality of the work has been maintained since going over to the Ektalith system, and in some cases even improved. Typical runs average a thousand copies, but paper masters make even short runs economical.

On a run of 15 copies from the master, our cost for master, paper and ink is about 36 cents for the Ektalith method, 56 cents when using a metal plate, and 75 cents with other methods. Any of these would be an obvious saving over making photo copies, but the Ektalith-made master, which takes only two minutes to process, is by far the most economical. The savings might even apply on smaller runs than 15, except that this would result in inefficient use of the offset duplicators and a consequent increase of labor costs.

**THE REPRODUCTION** Department uses a Model 20 Kodak Ektalith processor located in its darkroom adjacent to a Clydesdale 18 x 22 process camera. Using telephone-type buzzers, we have installed a two-way signal system between the copy-board and the back of the camera to co-ordinate the placing of the original material on the copy-board and the exposure of the Ektalith transfer paper. This installation supplies Ektalith masters to a Rotoprint 30, two Multilith 1250's a 1250W, two 2066's and a 1275.

In addition to the usual wide range of internal and external communication materials, such as any in-plant reproduction department can produce on offset duplicators, Ohio Bell has a number of applications that are unique to the communications industry. One example is the reproduction of Rate and Routing Sheets using paper masters. These sheets are up-to-the-minute alphabetical listings for all possible toll-call points, with correct routing and proper charges. They are placed in multi-leaf folders at every long distance operator's position, and enable her to put through a call from Cleveland to, for example, Shubuta, Miss., or San Luis Obispo, Cal., with a minimum of delay.

**TO KEEP UP** with constant changes in this information, the reproduction department copies Rate and Routing Sheets from a matte acetate original on to a master in a 60 per cent reduction, two-up on each master. The run of 430 copies is produced on a medium-weight 5½ x 11 sheet in a green stock

*Mr. Sheridan is Reproduction Supervisor of Ohio Bell Telephone Co., Cleveland, O.

**Fig. 1. L. G. Long places material to be copied onto copyboard of Clydesdale camera. Many jobs, such as Rate and Routing Sheets, are copied two-up on one sheet of Ektalith transfer paper. Using a two-way buzzer system, Mr. Long advises camera man when copy is ready.**

**Fig. 2. In the meantime, cameraman J. H. McManamon in the darkroom has placed the Ektalith transfer paper on camera's vacuum back. On signal, he makes the exposure, then buzzes for Mr. Long to proceed with the next copy.**

that was found to be easy on the toll operator's eyes. After leaving the Multilith, the sheets are cut into two 5 x 4½ inserts for the folders in which they are used.

Another unusual application is a series of technical training manuals. Because of constant growth, the company develops its own on-the-job training programs, even in such fields as vacuum tube theory. To implement this, Ohio Bell writes and reproduces its own training manuals. Since they follow a policy of internal promotions, a young man who, today, makes a series of Ektalith masters dealing with electronics, or runs them off on a Multilith for stapling into a training manual, may next week be studying from that same manual and preparing for a highly-paid job as a skilled telephone electronics technician.

**THE COST-SAVING** that we accomplished in these applications by switching to Ektalith paper masters convinced our management that the change-over was, as Nathan A. Schwartz, general disbursements accounting manager put it, "an excellent one."

"Here is one case," Mr. Schwartz added, "where spending was a saving. If all our investments turn out as well, we'll be very fortunate."

**Fig. 3. While Mr. Long is doing this Mr. McManamon puts exposed transfer paper through Ektalith Processor Model 20 for the two-minute procedure required to transfer image to a paper master for offset printing.**

**Fig. 4. After the two-on-a-page Rate and Routing Sheets have been run off on an offset duplicator, they are trimmed on the guillotine into two sets of the required 5 x 4½ size.**

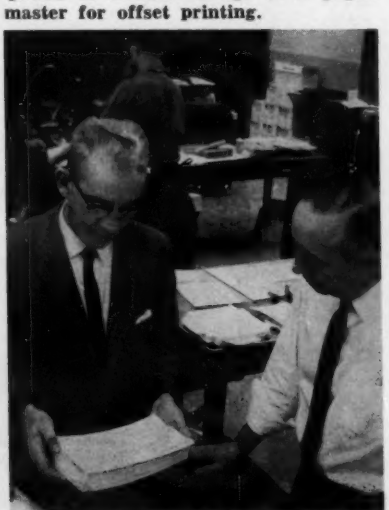

**Fig. 5. The author (left) and C. J. Becker, print shop supervisor, examine finished Rate and Routing sheets.**

# Expand in A Jiffy

## With Leich's L55 PBX, you jack-in cord circuits, central office trunks, and operator's circuit.

Easy, easy, easy! Leich's L55 PBX features jack-in circuit units to let you add, remove, or service equipment in jig time. Your service people can get right to the point. They're in and out in minutes, saving everyone's time and money including the subscriber.

Cord circuits, operator's circuit and central office trunks are jack-in type, as well as conference and tie trunk units. This makes servicing the board easier and faster too. It's an ideal setup for the customer who needs more circuits in a hurry.

Everything is nimble, quick and efficient with Leich's L55 PBX. Write for the L55 circular today.

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GENERAL SYSTEM

# with Jack-in Units!

# Employe Training Pays Big Dividends

## • *Choose Good Leader*
## • *Meet Regularly*

By MERRITT LUM

THE PLANT SUPERVISOR of a midwest telephone company, during an inspection of some lines which had received severe punishment from a sleet storm, came upon one of his men taking a terrific risk from electric shock in working close to a high tension power lead.

The supervisor quietly ordered the man to the ground and rather sarcastically pointed out the chances he was taking. He closed with "and don't do that again or there'll be real trouble."

Although the worker obeyed instructions, he was sullen about it.

### Taking Same Risk

A month later, the supervisor came upon the same man, taking the same risk. He was not observing the safety rules laid down to govern working near power lines.

This time there was a bawling out that could be heard by the entire crew.

As the supervisor was checking out that evening, he met the general plant superintendent. The supervisor spoke of the risks men seemed to be taking.

"Well, Bill," the superintendent replied, "I wonder if we don't need a good training program. Shouldn't we get the men together and go into this matter of safety?"

"But, boss," replied Bill, "I do some training every day. I check carefully, and correct errors on the spot. Men can't get away with anything when I'm around."

### Background of Appreciation

"Well, Bill, your method of instruction isn't at all what I'm thinking about in suggesting a training program. There's a big difference in the two things. Stop and think a minute. Enforcing a rule is a mandatory procedure. Men are bound to listen. But under that method, there's no background of appreciation of the need for the rule, to bring about voluntary and cheerful acceptance.

"Take that lineman who was careless about working around high tension lines. He probably thinks you're overfussy and that he knows best because he's up the pole, doing the work. Now if he really knew the reasons behind your concern, the "whys" for our rules, he might be more inclined to follow them.

"Effective instruction, Bill, is a two-way street. The man receiving the instruction must feel it is justified. Otherwise he is likely to be sullen, as you say Al is.

"When full explanation is given, and men are asked for their ideas, when they can throw their ideas back and forth—as they do in group sessions —then the training sticks. It becomes a part of men's will to action.

### Weekly Meetings

"Where I came from," continued the superintendent, "we had weekly discussion group meetings. They covered a variety of subjects. They were open discussion groups—and they helped correct bad habits and wrong attitudes. The time was well invested.

"We had groups of workers in meetings, and we had groups of supervisors, too. From what you tell me, there's something you, as a supervisor, can learn about getting men's full cooperation. In our meetings, we decided it was fatal to reprimand a man in public and we decided always to get the other man's side of the story before we went after him."

Bill and his boss recommended the training sessions to the general management of the company and, even though the company was small, the recommendation was accepted. In a short time, there was a noticeable improvement in morale. Men on the job frequently mentioned possible items for the next discussion meeting.

The meetings were not a cure-all, but then, nothing is. They were, however, considered a success.

Telephone companies which are presently feeling a need for a training program, and those which may have made a half-hearted start, may have some questions.

### Smaller Company

Often it is asked if a training program is feasible for the smaller company, one, say, of 100 or less employes.

The answer is a decided "Yes." A small company can far less afford a serious accident than a large company. A small organization can reach success only by getting everyone pulling together.

A small company must hold its men, and attract others. It's the quality of management and supervision that makes employes real boosters. In a small outfit, with a small sales force, all employes must become customer conscious.

One might go on with numerous other categories in which the small company should have the advantage of organized training.

When you consider training plans, a dozen "must" subjects will crowd you. Take them up one at a time and do the job thoroughly.

### Possible Subjects

Probably safety is a good starting point for group training conferences, for that subject involves both life and property. Short-cuts in operation will prove a lively topic. As soon as practical, customer relations should be considered—what each individual can do, to boost the goodwill of the company.

If there are five or more supervisors, they should have meetings to consider the fine points of leadership. If there is

a group of salesmen, they also will profit greatly by organized meetings.

Other topics will suggest themselves; and you may have parallel groups on different subjects.

No training group should be larger than 12. It is not a lecture course. It is a participating discussion, in which the ideas of each man are needed. Each man learns and becomes convinced by the exchange of experiences, the sparking of one man's opinions against those of another. Not more than 12 can find full expression in a meeting. Moreover, a small group encourages the shy man to speak up.

Meet regularly—at least once a month. This is important.

Call the meeting to order on time. Start with interesting and important matters that a late-comer will miss. He'll soon get the point.

### Choosing Leader

The problem of choosing a leader may hinder a company in starting training conferences. Don't necessarily think in terms of the general manager—he's probably too busy. There's another reason why he may not be a good leader—he might be too bossy.

We must have a leader before whom the men are not afraid to speak up, and express their real opinions. Maybe the personnel manager is the man. Perhaps it's the patient and friendly supervisor.

There are a number of qualities that disqualify otherwise clever men as leaders. Stuffiness! Tendency to Dictate! Proneness to Snap Judgment! Lack of Patience with Awkward Expression! Anxiety to Show Off! Playing Favorites! Any of these will handicap a leader.

We're building a picture of a man who likes all kinds of people, who likes working with others, who is patient, who can clarify misunderstandings without scorn, who can compromise, who can reconcile.

He must, of course, be fairly well acquainted with management policy, and must be a man who can readily get the ear of management.

### Basis of Personality

Some years ago I had the responsibility of choosing leaders for a training program to be instituted in scattered divisions of a large company. There were no definite positions from which leaders were chosen. In two divisions, personnel directors were chosen. In another case, an employment counsellor was the man. One was a safety director. One was a superintendent. In each case, the leader was chosen not on the basis of what he knew, but on the basis of his personality and his human qualities.

For encouragement's sake, let's agree that there is no mystery about good leadership. A college degree does not necessarily qualify a man. An expert in psychology may be a wash-out. As a matter of fact, a leader need not officiate beyond his introduction of the subject, and the assurance of a definite conclusion—a meeting of the minds. He must see to it that the subject is adequately presented, either by film or chart or lecture. He must be prepared with questions that will bring out all phases of the subject in discussion. He must goad the conference into action.

The question often comes: "How can we assure group discussion?" Well, that is the main test of leadership. The smart leader always has provocative questions. The smart leader seldom answers a question from the group; instead he throws the question back to the group, for another man to answer.

**The Group Leader**

- **makes the subject clear**
- **maintains a cheerful meeting**
- **is patient**
- **draws out suggestions and opinions**
- **listens equally to both sides on each question**
- **lets the group discuss possible action to be taken**
- **submits group recommendations to management**

### Speak Their Minds

The leader encourages men to speak their minds, whether or not they agree with company policy. It is his job to get all reservations out on the table. If men seem to disagree with policy, it's probably because they don't understand the need for it. If, after full explanation, there is still disagreement, the leader demands evidence that can be presented to management.

This brings up the question of minutes for the meeting. How far should the record report the meeting? Well, men will speak up far more freely, if they know they are not going to be quoted outside the meeting.

So we could have this understanding: No minutes will quote a man against his will. The recording secretary makes notes as the meeting progresses; and toward the close, he is asked to read and amend the minutes to meet the group's approval.

Recommendations to management should be tactfully presented as suggestions, and should be substantiated by cases. The suggestions should be submitted to management by the leader or by a committee of three from the group.

### Keep Discussion Secret

It is important for each man of the group to pledge himself to keep secret the group discussion, except that which is recorded in the minutes. The heart of the program is to bring out in the open every reservation that may be blocking the whole-hearted cooperation in carrying out company rules or methods.

I was called in to organize a discussion group for supervisors in an eastern company. When we met, I found the men were holding back. These men had been soured by the rebuffs to their ideas by a previous plant manager. The

*(Continued on page 48)*

**The discussion leader maintains a friendly attitude with his small group and is willing to listen to both sides on each question. Here, the leader prepares to write down the points that members of the discussion group agree to.**

# ABOUT SPACE COMMUNICATIONS

By RALPH O. BECK*

**PART IV**

SEVERAL noteworthy events in the field of proposed space satellite legislation have occurred in recent days. All have taken place on the Senate side of the Nation's capitol. In the meantime, the House Committee on Interstate and Foreign Commerce has been busy holding executive sessions on space communications legislation.

**First,** Senator Kerr (D, Okla.) has reported out on amendment S. 2814, from the Senate Committee on Aeronautical and Space Sciences.

**Second,** Senator Magnuson (D, Wash.), as chairman of the Senate Committee on Commerce, promptly announced that hearings will commence shortly on proposed legislation to provide for the establishment, ownership, operation and regulation of a commercial communications satellite system. Indicating that primary consideration will be given to the amended S. 2814, Senator Magnuson stated that Sen. John O. Pastore (D, R. I.), chairman of the Sub-committee on Communications of the Commerce Committee, will preside throughout the four-day hearing.

**Third,** Senator Kefauver (D, Tenn.), as chairman of the Sub-committee on Anti-trust and Monopoly of the Senate Committee on the Judiciary, has been conducting hearings on anti-trust problems of the proposed space satellite communications system.

### Two Areas of Legislation

The significance of these three events should not be overlooked. Basically, it has resulted in reducing the main areas of proposed space communication legislation from three to two. By reporting out S. 2814, Senator Kerr, in effect, combined the views of the administration with those of the bill he introduced (S. 2650), referred to sometimes as the Kerr Plan. The amended S. 2814 has, therefore, been dubbed the "Compromise Bill." The other area, that of government ownership and operation, is under consideration by Senator Kefauver's sub-committee.

### Features of S. 2814

As it now stands, S. 2814 contains these important points:

(1) A privately-owned space satellite corporation.

(2) One class of stock—divided equally between communication carriers and the general public.

(3) Stock will be issued at a price not more than $100 per share.

(4) Fifteen directors—six elected by the carriers, six elected by public stockholders, three appointed by the President of the United States.

(5) Stock purchased by carriers not to be included in their rate base.

(6) Non-voting securities, bonds, and debentures may be included in rate base for international communication services only.

(7) A non-carrier stockholder may own not more than 10 per cent of the voting shares of the corporation.

(8) The State Department "shall advise the corporation of relevant foreign policy consideration" when notified by the corporation of impending negotiations with an international or foreign entity. The corporation may request assistance from the State Department in such negotiation.

(9) The President shall "exercise such general supervision over relations of the corporation with foreign governments or entities or with international bodies as may be appropriate to insure that such relations shall be consistent with the national interest or foreign policy of the United States."

(10) The National Aeronautics and Space Administration (NASA) would advise the FCC on technical characteristics of the system, with the FCC having authority to approve technical characteristics of the system employed by the corporation and by the ground stations.

(11) Ownership of the ground stations would be determined by the FCC, which would be authorized to license either the corporation or the communications common carriers to establish and maintain, either jointly or separately, the ground stations.

(12) The FCC shall encourage the establishment and maintenance of ground stations by common carriers wherever, in the judgment of the FCC, such would not be inconsistent with the policies of this title (The Compromise Bill).

### For Government Ownership

The importance of Senator Pastore's communications sub-committee hearings is quite clear as they will reveal both administration and carrier feelings toward the efforts of Senator Kerr's space committee.

In the meantime, several witnesses before Senator Kefauver's anti-trust sub-committee have been very outspoken in favor of government ownership and operation of a space satellite communications system. Some of these witnesses have been highly critical of the FCC. Because of the widespread and generally accepted philosophy of private ownership within the telephone industry it is worthwhile to examine some of the statements made before this Senate sub-committee.

Senator Kefauver himself said when calling the hearings to order (Vol. 1, p. 2):

> "This morning we are beginning hearings on the anti-trust and monopoly problems involved in the establishment of the United States segment of a world-wide communications system.
>
> "It is difficult for us to realize the immense potential of such a system. We are on the verge of a

*This is the fourth of a series of articles by Mr. Beck, who is Vice President of Hawaiian Telephone Co. of Honolulu. He represented his company on the FCC Ad Hoc Carrier Committee, composed of 10 U.S. international common carriers, to study establishment of satellite communications system.

complete revolution in long distance communications. Developments in the recent past and prospective developments in the very near future can only be described as fantastic."

He furthermore set the scene for his hearings on anti-trust and monopoly problems of proposed space communication legislation by mentioning the following as "but a few of the problems with which we are directly concerned":

"(1) Is the prime reason for legislation at this time the necessity of an exemption from the Sherman and Clayton Acts? Is it necessary to write a specific exemption into any legislation which would establish a national private monopoly in this field? Is there a problem in connection with the prohibition against the participation by American corporations in cartels?

"(2) What are the prospects of domination of the satellite corporation by a single giant company, AT&T, and what effect would such domination have on domestic and overseas communications in general?

"(3) In view of the anti-competitive effects of joint ventures, is it not unwise to have the government not only tolerating such an organization, but, rather, establishing it?

"(4) With the major stockholders being in the equipment manufacturing business, how will it be possible to maintain competition in the purchasing of equipment for the corporations? How can we prevent unfair practices against smaller suppliers of communications equipment?

"(5) Will a private monopoly impede scientific advance in order to guard against obsolescence of equipment?

"These and other serious anti-trust and monopoly questions are involved in the establishment of a private monopoly in this field. At this time we don't know what type of system will be made operational, what many of its uses might be, what its value may be, and what plans other countries may have for cooperating in the establishment of a single world-wide system. Until we can answer some of these questions, I believe we should delay a final decision in establishing a private monopoly. Nothing will be lost and much might be gained by withholding this decision for the moment."

### Morse, Cellar Testify

Sen. Wayne Morse (D., Ore.), one of the co-sponsors with Senator Kefauver of S. 2890 (the government ownership bill, stated at the sub-committee hearing):

**Ralph O. Beck (left), author of the series "About Space Communications," is shown in Washington, D. C., talking to Sen. Oren E. Long (center—D., Hawaii) and Rep. Daniel K. Inouye (D., Hawaii) in front of the space communications display at the House Interstate and Foreign Commerce Committee hearing on space satellite communications.**

". . . . I am such a strong defender of the private enterprise development of our space facilities, because it has been proven to us over and over again that if you turn it over to monopolies, you don't strengthen the private enterprise system. For the monopolistic approach is always counter to the best interest of the private entrepreneur."

Rep. Emanuel Celler (D., N. Y.), long a critic of AT&T as well as the FCC, stated at the Kefauver committee hearing:

". . . . [T]he FCC has candidly admitted that it has never regulated AT&T's overseas rates. Think of that, gentlemen. It has never regulated those rates. As recently as July 6, 1961, the FCC wrote AT&T: 'As you are aware, the commission has never had before it data on which to properly evaluate the level of earnings on your overseas communications services.'

"So when you and I pick up the telephone and we want to ring up Europe, those rates are not fixed by the FCC which is supposed to fix those rates. They are fixed by the company itself. This is an intolerable situation, and yet this company wants to dominate the whole satellite system and probably fix rates in that system as well without let or hindrance."

On the same subject, Representative Cellar said:

"AT&T has successfully avoided regulation on earth. Divine guidance would be necessary to regulate AT&T if it is permitted to expand its domain into space. . . . "

Mr. Cellar brought a note of laughter to the hearing when he stated:

"I personally would be willing to subscribe to the proposal that after 20 years, every regulatory agency should be abolished and a new one set up just to wipe out all the cobwebs. . . .

"That shouldn't apply to congressmen, though."

### Illinois Professor in Act

Dr. Dallas Smythe, former FCC staff member and currently professor of Communications Research at the University of Illinois, made it clear that he was expressing his own views and not that of his university. When questioned if he was an advocate of government ownership of all communication facilities, Dr. Smythe stated:

"As to the ownership of the telephone system itself, I don't follow you that the logic of my position requires that it be government-owned.

"I think that you have an open choice, and the choice, either side of it is preferable to the present, namely, let us leave off hypocrisy and foolishness and stop kidding ourselves.

*(Continued on page 46)*

# Speak Up on Communications Theme of 57th Lone Star Meet

By HELEN HARDIN

INDEPENDENT telephony in the Lone Star state was represented on Mar. 11, 12, and 13 in Dallas at the 57th annual meeting of the Texas Telephone Association, by around 700 men and women.

With an announced theme of the magnitude of "Satellites and the Space Age", each of the principal speakers before the convention pleaded for old-fashioned "speaking out" on communications problems.

The association president, Marion A. Clay of Lufkin, introduced Frank G. LaPrade, president of the United States Independent Telephone Association, and head of the Lee Telephone Co. of Martinsville, Va.

**Mr. LaPrade** reminded his audience that "The USITA Is In There Pitching", ready to give aid cooperatively to telephony as it expands across the big southwestern state.

"Some of our more serious problems at this time," Mr. LaPrade said, "stem from pending and proposed legislation. . . In fact, the increasing importance of legislative watchfulness by our association prompted us to set up a new committee on legislation, with Merle Hale of Lincoln, Neb., as chairman. When so many laws affecting the business world and the future of our economy are proposed, it is especially incumbent upon organized business *to allow itself to be heard*. Much of the 'speaking out' must be done by various business groups, including associations like our own (USITA)."

Mr. LaPrade detailed as the pieces of legislation currently of major interest to the telephone industry, these six items:

(1) The 10 per cent excise tax on telephone service.

(2) Minimum wage legislation.

(3) The President's broad tax program.

(4) A bill to penalize destruction of telephone property.

(5) Anti-slug legislation.

(6) REA legislation.

**On excise tax,** the USITA president said: "With nearly 800 million dollars in annual federal revenue at stake, and with an all-time-high budget, no realistic person can believe there is much chance of congressional repeal of the telephone tax at this session. Nevertheless, the telephone industry, Bell and Independent, has no recourse but to continue to beat the drums in support of letting the tax on our service die an ignominious death. The Bell System also has decided to continue this policy in our joint effort to get rid of this discriminatory and inequitable levy."

Mr. LaPrade noted the USITA has also supported legislation to penalize the destruction of telephone property, which has been enacted into law. Legislation to tighten existing laws on the use of slugs and spurious coins is still pending.

Mr. LaPrade offered Texans this cogent quote from Clyde S. Bailey, USITA's executive secretary:

"It is obvious that a nationwide formal assault has to be made upon profligate (federal) expenditures. Until the public is awakened to the need for this, the people on Capitol Hill are going to continue to say that the government cannot afford the loss of 800 million dollars in revenues."

Clinching the importance of speaking out, the speaker added, "Americans have a way of expressing their views in down-to-earth, simple terms, and one of the phrases is: 'I put in my two cents' worth.' Putting in our two cents' worth, or expressing our individual opinions, can be vitally important to the future of our country and to our individual and business interests. A multitude of two cents' worth can amount to a large-sized piece of change."

**There are various** ways whereby the telephone industry can be heard. Chief among them, Mr. LaPrade said, is through participation in the work of the state telephone associations, through the use of the USITA-produced film, "The Independent", and by appearances as speakers before local organizations such as civic and service clubs.

In conclusion, President LaPrade told the convention, ". . . the most powerful deterrents to harmful legislation, to the threat of outside competition, and to other challenges facing our industry are, in one word, 'Cooperation' . . . The more you do for, and contribute to, both your state and national associations, the more your associations can do for you."

Speaking out boldly for profits was the plea of Carl A. Ulffers Jr., assistant vice president of American Telephone & Telegraph Co., New York City, in a talk entitled "Free Enterprise and Public Utilities". (Mr. Ulffers' talk appeared in full in TELEPHONY, Mar. 10.)

**Paul Henson,** executive vice president of United Utilities, Inc., Kansas City, Mo., chose as his topic "The Independent Stake in Space Communications".

Mr. Henson reviewed certain developments in space communications and problems in research. He believes that the communications industry owes President Kennedy an accolade for supporting the free enterprise concept in his statement on communications satellite policy issued last July.

He pointed out that in spite of dissension among common carriers on the *modus operandi*, and the political furor which has come about, the free enterprise concept was well represented through the introduction on Jan. 11, 1962, of the original Kerr bill. Senator Kerr and Senator Magnuson on Feb. 7 introduced the administration's bill, and Senator Kerr then stated: ". . . the most effective means of insuring that

**W. S. BAIN**
**TTA President**

the (communications satellite) program is put into operation, at the earliest time, and operated successfully, is by creating a corporation, *operated for profit*, within our private enterprise system. . ."

While a "TVA in Space" seems to have been avoided, at least, for the

**D. M. ROBB**
**TTA 2nd Vice President**

time being, Mr. Henson regrets that questions of ownership, fears of government control, and various controversies can cause delays in establishing our space communications system.

". . . **If private** industry is indeed permitted to own and operate the satelite system, the entire industry must do the very best job possible to provide a reliable communications network in the shortest feasible time," he indicated.

The Independent industry has a vital stake in this. By 1980, Henson said, it is thought that some 235 million telephones will be in service in the U. S. The forecast for telephones outside the U. S. by 1980 runs into a figure of 265 million telephones. It is further estimated that about 100 million overseas calls will be made in 1980.

Traffic of this magnitude will certainly affect Independent operations, Henson emphasized, stimulating both originating and terminating traffic. Because of the greatly increased number of voice circuits that will be required, and because of anticipated closed circuit and network television needs, facilities via satellite to handle overseas traffic are indicated, he said.

"As a part of the world-wide communications network, the Independent industry has a vested interest in the timely provision of economical, reliable and adequate facilities. . ." he continued.

He told the convention it looks as though space transmissions within continental U. S. are "a long way down the road," but emphasized that provision for reliable and economic overseas facilities is a responsibility that must be faced.

**Henson pointed out also that** the entire communications industry has benefited by the basic and applied research that has gone into carrier systems, point-to-point radio relay systems, coaxial cable and wave guide systems, and that it also will benefit by research and development in space communications.

While it is correct that the federal government has developed the technology and hardware for launching a communications satellite, it is not correct that the federal government has developed the technology and hardware for the satellite itself. This development has been done *by private enterprise, with private capital*, he said.

Although the outcome of legislation establishing a privately owned space corporation is still very uncertain, said Henson. "If the Independent telephone industry, as a part of the communications industry, sits smugly by while those directly involved fight their own battles, we have no one but ourselves to blame if legislation is enacted which eventually will prove to be detrimental to our own operations. Our industry has gained a favorable reputation for having foresight in matters affecting our local operations. I submit that now is the time to establish a reputation for having foresight in those matters which do not affect us locally today, but most assuredly could affect us tomorrow."

In summary, Mr. Henson challenged Lone Star telephony:

**"If we Independents** desire to continue to benefit from the refinements in local equipment and services which

**H. Y. PRICE JR.**
**TTA 1st Vice President**

can come as by-products of profit-motivated space communcations research and development, . . . if we Independents want a proper voice in rate-making procedures when space communications developments expedite the establishment of flat-rate, zoned interexchange service within this

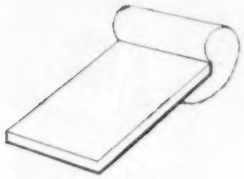
**P. D. GRINSTEAD**
**TTA Treasurer**

country, . . . if we Independents want to continue to make our own decisions in the best interests of our own businesses, . . . if we Independents want to stay independent of excessive government control of our local operations, . . . then we must take action now to block any trend toward government intervention in the entire communications industry, which could start with government ownership of a satellite communications system. . . ."

During the association's meeting, conferences were held on commercial,

*(Continued on page 54)*

# The Plant Man's NOTEBOOK



By RAY BLAIN, Technical Editorial Director

SOME PRESENT-DAY telephone solicitation can be compared to "junk mail by telephone". Calls with a high-pressure sales pitch for dance lessons, cemetery lots, magazine subscriptions and vacuum cleaners, etc., can become a real nuisance. The telephone companies are helpless to do anything to correct this nuisance, as anyone with a listed number is subject to these undesired calls, just as everyone must accept junk mail.

This annoyance is presently being compounded in certain areas by a robot that is making these nuisance calls. When you answer, you are greeted with the statement: "This is a recorded announcement." You are then advised that yours is one of the lucky numbers to win a prize. In order to learn what you have won, you must call a certain number. If you call you will probably be advised that you have won a free dance lesson or something else of doubtful value.

Bill Gold, who writes "The District Line" in the Washington (D.C.) *Post*, reports the following experience of a friend of his who has an electronic secretary on his telephone:

"The other night my friend came home and found that his robot had recorded a message from one of these robot selling machines. This could be the answer to the whole problem—machines talking to each other, one robot with a guaranteed sales pitch, and the other a robot with perfect sales resistance. The perfect solution indeed. Let your machine and the salesman's machine battle it out until one or the other blows a tube."

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We wonder if telephone women know that spike heels contribute heavily to the 40 million dollars worth of damage to company property, which occurs each year. The heels often dent resilient floor coverings such as linoleum, asphalt tile, vinyl asbestos tile, etc.

This is a problem presently being faced by all building owners. The Bell System finds itself burdened with bills in the hundreds of thousands of dollars to repair or replace floors damaged by spike heels. Some of these floors are new, while others are not yet marred enough to require repairs, yet they do represent a safety hazard. Rough surfaces greatly increase the chance for tripping and falls.

The Bell System realizes that only a change in fashion, and not an employer's decree, is going to bring an end to the wearing of spike heels. It is believed, though, that by making women employes aware of the destruction caused by the spike heels, not only at work, but in the home as well, they will try to help reduce the damage.

•

Our long-time friend, Fred C. Hall, writes us from Oakland, Cal., where he is vice president of Powerquip, Inc. This company has a rental fleet of modern utility trucks equipped with the latest type hydraulic derricks, diggers, pole pullers, etc. These units are available for rental to utility companies and/or contractors by the day, week month, or longer.

This is a radically new idea, but we understand that results, so far, have been most encouraging for everyone involved.

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In Neligh, a town in which the General Telephone Co. of Nebraska exchange was converted to dial operation back in 1958, an old magneto telephone is mounted on the front of a store. If you go over to this telephone, lift the receiver, and give the crank a yank, you'll be amazed to hear a message informing you of the values to be found inside the store.

The story behind the message is that the telephone is connected to an electronic secretary which is activated when the receiver is lifted and the crank turned. A different person in the town records the message as a mystery voice on the Electronic Secretary each day. Then, the listeners who correctly identify the voice are awarded prizes in merchandise.

The proprietor of the store states that this is one way to invite people into his place of business. Moreover, it's a conversation piece, and a means of getting people to talk about the place of business with favorable comment. In addition, it gets traffic into the store, and that's what every business likes to see.

•

According to the National Inventors Council, puncture-proof tires, a permanent lubricant for vehicles, a better rubber preservative, and a "steerable parachute" are among the inventions wanted by the federal government's military and civilian agencies.

Among other items sought by the U. S. Government are: new adhesives, a diesel engine exhaust filter, an automobile battery with long storage life, and a "one-way stretch" fabric for insulation material in cold weather clothing.

The complete list of desired inventions is available upon request to the National Inventors Council, OTS, U. S. Department of Commerce, Washington 25, D. C.

•

A recent article in the "*Telecommunications Journal of Australia*" by D. P. Bradley, engineer for the Australian Post Office, describes his impressions, both technical and general, gained on a visit to Europe and North America in late 1959. The visit was made primarily to deal with a number of technical matters in connection with the contract for the Sydney-Melbourne coaxial cable awarded to Felten & Guilleaume Carlswerk A/G Cologne (F&G), but time was also spent investigating various aspects of external plant practices, particularly cable design and application. In this connection, the writer had the pleasure of a conversation with Mr. Bradley during his visit to Washington, D. C.

In comparing Australia and North America telephone-wise, Mr. Bradley makes the following statement: "In spite of being aware of the dangers of uncritical acceptance of overseas

matters, it is difficult for an Australian visiting USA and Canada for the first time to avoid being so impressed by the general similarity of the three countries to such an extent as to unduly influence him toward North American techniques. This is particularly so if he is returning to Australia after a visit to the U.K. and Europe, where customs, ideas, and conditions are obviously very different from those at home. The Australian landing in the USA after a period in Europe feels so much at home that he is bound to be biased towards American ways. These are the views not only of the writer, but of every experienced person with whom he has discussed the matter."

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We note that the suggestion of a telephone lineman in Harrisburg, Pa., on an arrangement for using an electric hammer to tamp poles and anchors was accepted. He welded a plate on the bottom of a blank bit so that the hammer could be used to take the work out of tamping. The blank bit is about 4 feet long and the plates vary in size, the largest being about 4 inches square.

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The Bell Telephone Co., of Canada News has issued a bulletin requesting all Bell men and women to assist in keeping public telephone booths tidy and attractive. Public telephone collections amount to nearly 14 million dollars a year from the thousands of booths provided for the convenience of customers in the many Canadian communities served by Bell.

In spite of periodic inspections by plant people, who are directly concerned with keeping public telephones in order, breakdowns occur. Coin chutes become blocked, handsets are missing, lights or signs burn out, booths get dirty or damaged, directories become torn or outdated soon after an inspection has shown that everything is in order. Any of these conditions can go undetected between inspections, unless the trouble is reported.

Employes are being requested to notify Telephone Repair Service whenever they notice anything amiss in a telephone booth. Tidy, attractive booths, with the equipment in top working condition enhance the customer's impression of the company, and also stimulate usage and revenues.

**"Cross Talk"**

Middle age is described as the time when the narrow waist and the broad mind begin to change places.

# Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

**Q. Could you advise us where we might obtain reliable information on satellite tracking?**

A. A good, 128-page, clothbound book on this subject can be purchased from TELEPHONY for $5.50. This book introduces the scientifically-inclined reader to the concept of satellites and their paths. It explains how and why satellites are launched, why they behave as they do, and how the orbital elements of any terrestrial satellite can be derived with a minimum of data. The information and calculations presented in this book, for the most part, may also be applied to the field of guided missiles, and thus will also provide the reader with an understanding of missile trajectories.

The 10 chapters are reinforced by nearly 100 illustrations and two appendices of mathematical tables, which enable the reader to make his own calculations in the tracking of satellites. Chapter headings include: History and Background of the Planets, What keeps Satellites Up, Relating the Orbital Plane to the Earth, Orbital Elements of a Satellite, How to Compute the Orbital Elements of a Satellite, Orbital Elements from Tracking Data, How to use Orbital Elements, Visibility of Satellite and Missile Orbits, Ballistic Missile Trajectories, and The Atlantic Missile Range. This book is authored by Stanley Macko.

•

**Q. What is insulated line wire and where, in your opinion, can it be used to advantage?**

A. Any standard type of line wire is available as insulated line wire. One type of insulation is a tough, low-pressure, high molecular weight, black polyethylene compound. The abrasive characteristics of this material are outstanding. In modern telephone plant where open wire construction is employed, the use of this product eliminates many of the problems generally associated with open wire. It eliminates problems of midspan conductor contacts where long span construction is used in high wind areas. When used with carrier circuits, it provides uniform attenuation characteristics between wet and dry weather conditions due to improved line leakage characteristics. Moreover, because of the excellent abrasion characteristics of the polyethylene insulation, this type of wire permits the use of open wire construction through trees where it is impossible to trim. Intermittent noisy line conditions associated with tree branch contacts are thus eliminated. In areas where Spanish moss is a problem, maintenance costs associated with open wire are eliminated. In high corrosive areas, such as industrial locations or seacoast areas, the insulation protects the line wire from corrosive effects. In seacoast areas where salt spray deposits on insulators necessitate high maintenance expense—in order to provide satisfactory circuit operation, the use of insulated wire eliminates this expense.

Under flat terrain conditions, substantial savings may be made by the use of extremely long spans. Under the long span concept, spans of 700 or 800 feet are used, and the wire is permitted to rest on the ground when subjected to storm load conditions. As a result of the excellent abrasion and electrical characteristics of the insulation, the circuits will remain free of trouble even under this extreme condition.

•

**Q. What is considered a safe overlap of the two sections of an extension ladder?**

A. It is generally agreed that ladders from 16 to 32 feet should have an overlap of 4 feet; ladders of 36 or 40 feet should overlap at least 5 feet. In other words, a 40-foot ladder would have a maximum working length of 35 feet.

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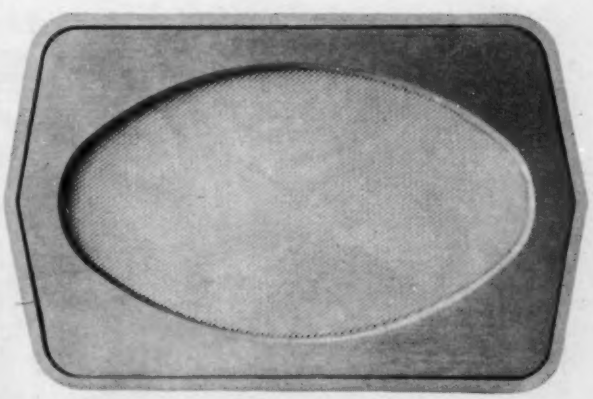

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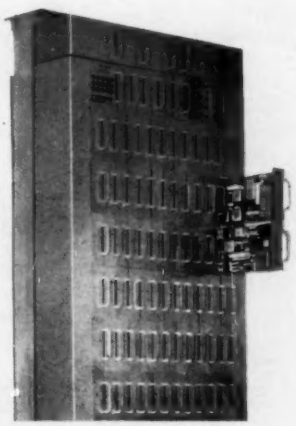

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# Office Equipment Replacement

# WHEN?

By William J. Milford

IT IS NEVER an easy decision to make—this business of determining the exact time for replacement of any piece of telephone company office equipment. Many things enter into the problem.

Some companies follow a regular routine of discarding, regardless of the equipments' remaining useful life, which can mean a waste of invested capital dollars. Other companies wait until the "fall apart" time; an equally unprofitable procedure, for then, trade-in values have not only vanished, but work has been processed on such equipment at lowest efficiency and with high payroll costs.

Actually, no two offices have the same day-and-week time at which replacement should be made; there are far too many individual factors involved in the use of every piece of office equipment. Only where each factor is weighed and considered carefully, can management be assured that the right time for replacement has been chosen.

**Accompanying** this article is an "average" replacement chart considering major items of office equipment and machinery. It is intended only as a guide, by which the individual executive can make adjustments and determine the most profitable time for such equipment replacement.

"Average" replacement periods are affected by a number of factors, each of which can determine the time when any given unit should be replaced. The degree to which each "factor" operates in the individual telephone company office set up affects the rating. Here are the situations the writer regards as most important.

**Volume of use.** Of primary importance, of course, for any given machine can be used twice as much in a working day in one office as it is in another. Those units which receive hard and consistent use all through the business day, week after week, necessarily have much shorter useful life than those used only intermittently.

In many offices, the complicated problem of setting up useful life periods for each given machine is avoided by rotating use from one spot to another. At a given desk, for example, an electric typewriter can be used so hard and consistently that it will have a useful life of one-half that shown in the accompanying table. At another, one will be used only intermittently and have 50 per cent more life. Rotating the machines between the two spots equalizes their life expectancy.

**Regular maintenance.** All figures shown in the accompanying chart are based on regular maintenance attention to the listed office machines and equipment. In an office where maintenance comes only after "break-down", useful life can be reduced by as much as 25 per cent.

Any given piece of equipment can continue to do its job, even though it has not received proper cleaning, adjustment and similar routine maintenance; *but* the extra wear and tear exerted on the parts not only shorten useful life, but create a marked decrease in efficiency of performance.

Office equipment maintenance does not cost extra—it saves dollars, not only in keeping general overhead down, but in prolonging the useful life of equipment.

**Skilled operator use.** Any given piece of equipment which has been used only by a skilled and efficient operator, all of the time, can be expected to deliver its normal useful life. In some cases, this can even prolong useful life by as much as 10 per cent, provided all other life factors have been adhered to in the office.

Where equipment has been used by semi-skilled or unskilled employes, the useful life is usually cut by from 15 to 20 per cent, even though proper maintenance has been provided. This is particularly true of the more complicated types of office machines and equipment. With the units in which a company has a particularly high investment of capital funds it is seldom good policy to attempt to cut payroll costs through the employment of semi-skilled personnel as operators.

**Current maintenance costs.** Just as there comes a time when the family car maintenance and repair costs are too great to hold onto the vehicle any longer, the similar condition applies with office machines.

Usually, this occurs very near, or

*(Continued on page 51)*

**OFFICE EQUIPMENT REPLACEMENT CHART**

| | Average Years of Life | |
|---|---|---|
| | Manual | Electric |
| Adding, listing machines | 10 | 7-8 |
| Addressograph & graphotype machines | — | 10 |
| Air conditioners | — | 5-6 |
| Calculators, (key-driven) | 10 | 10 |
| Calculators, (rotary) | — | 10 |
| Checkwriters | 10 | 7 |
| Dictating & transcribing machines | 10 | 7-8 |
| Duplicating machines, (rotary spirit) | 10 | 7-8 |
| Duplicating machines, (stencil) | 10 | 7-8 |
| Duplicating machines, (gelatin) | 10 | — |
| Duplicating machines, (rotary) | — | 7-8 |
| Duplicating machines, (plate or mat) | — | 6-7 |
| Folding machines | — | 10 |
| Letter openers | — | 7 |
| Postage meter machines | 10 | 7 |
| Posting machines, (partial electric) | 8-9 | — |
| Posting machines, (complete electric) | — | 7 |
| Scales, (parcel post, auto. computing) | — | 10 |
| Time clocks and recorders | — | 10 |
| Time stamps | — | 7 |
| Typewriters, billing machines | 7-8 | 5-6 |

THE

# TRAFFIC PAGE

By WINNIE BURNETT

WORK IS DEFINED in part by Webster's Dictionary as (a) something one is making, doing, or acting upon, especially as one's occupation or duty; task; undertaking: as, he laid out his *work;* (b) the amount of this: as, a day's *work.*

Vocation is defined in part as a call, summons or impulsion to perform a certain function or enter a certain career—any trade, profession or occupation.

Whatever you think about your vocation or work, you must feel that you are doing a job you can be proud of, or you cannot be happy. You may be indifferently content but you cannot be enthusiastically happy if you know you are turning out a mediocre or shoddy job.

Work should be an expression of your full capabilities—it should bring mental and spiritual satisfaction. I truly believe that a purposely shabby job is an abomination to the Lord, for the majority of your waking hours are spent, or should be spent, "on the job."

Work is not primarily a thing one should do to live, but the thing one should live to do—to serve in your chosen vocation to the best of your ability. Incompetence serves no one satisfactorily, certainly not the customers, and just as certainly not the incompetent worker. How can anyone remain interested in a work they know they are not performing satisfactorily?

Since the success of any job, big or little, depends upon the skill of the workers, the responsibility of job training and placement is very important.

The chief operator who has well-trained, dependable and enthusiastic operators in her office usually has satisfied customers, receives few complaints and many commendations. Also, this shows that she is a good leader and a good manager.

Good management can be learned just as can any other skills and capabilities. Some of the abilities required in good management are:

**Objectives.** Set a goal by carefully analyzing past performances and future estimates. Only when you have set your goal can you measure your progress toward that goal.

**Programming.** Determine what you are going to do before you do it. Make a list and be guided by it. Include in this necessary training interviews or programs for your force.

**Organization.** Master the skill of organizing, because the organization you develop will determine whether or not you will be able to reach your objectives.

**Motivate.** Get people to do things because they want to, not just because they are instructed to do them. Make each employe a part of the team—a necessary part. Show respect for their opinions and views. After all, they are directly concerned. Also, participation creates interest and enthusiasm.

**Introduce New Ideas.** New concepts and ideas will generate interest and challenge abilities. Don't just try to maintain the status quo. Almost anyone can stand still. Don't be a "fraidy-cat"—innovate!

**Decision-Making.** This is one skill a good manager must have, or develop. Of course, this is usually the culmination of the work of many people—gathering and interpreting data. However, the last step in your departmental decision-making rests with you, the manager or chief operator.

**Evaluation and Control.** Performance standards must be understood and accepted by the operators before their work can truly be measured or evaluated. The best performance standards are the goals and objectives set by management to guide their work. No leader can control the work in her office without valid and meaningful yardsticks to measure performance.

Actually, a chief operator, or any leader, is best judged by what her employes do to obtain the results *she* is there to get. This result is often dependent on the attitude of the employes toward the chief operator or manager. If there is a feeling of hostility or a negative feeling, often "roadblocks" are put up against instructions, but when there is an affirmative feeling on the part of the employes, they respond *affirmatively,* thus helping the development of a smooth-running team.

All too often the feeling of the employes toward management is ambivalent because they want to be *independent* and *dependent* at the same time. They want to say what they think and yet they want to be fully instructed on what to do. So, the road to a balanced approach is difficult.

One of the most successful means of attaining understanding and cooperation is to find a common language so the problems can be considered from many sides. Such consideration with a tone of mutual respect and trust between the chief operator and her group will most certainly lead to good employe relations. Good relations lead

*(Continued on page 45)*

# Courts and Commissions

## Missouri Judge Dissolves Injunction Against Company

Callaway County (Mo.) Circuit Judge W. M. Dinwiddie on Mar. 6 ordered dissolved a temporary injunction granted to R. C. Keown of New Bloomfield, against the Kingdom Telephone Co. (Auxvasse) directors and officers (TELEPHONY, Mar. 10).

Mr. Keown's right to serve on the board, to which he had been elected on Feb. 3 by shareholders of the Kingdom company, was denied by the directors during a reorganization on Feb. 9.

Mr. Keown stated that he lived in an area contemplated for service by the Kingdom company. He also cited a sales agreement between the New Bloomfield Mutual Telephone Co. and the Kingdom company on a "when and if" basis—the condition being approval by the Missouri commission of the application of Midstate Telephone Co. to serve the New Bloomfield area. Midstate has now received that approval, subject to its obtaining franchises from all communities in the area to be served; hence, Judge Dinwiddie's action.

## Approve Certificate in Mo.; Hear Service Request

The Missouri Public Service Commission on Apr. 6 granted the Midstate Telephone Co. a conditional certificate to install and operate dial telephone service in the rural areas in the vicinity of Jefferson City (TELEPHONY, Mar. 10).

Authorization for the certificate is upon the condition that Midstate must secure necessary franchises in New Bloomfield, Centertown, Russellville and Eugene. According to the commission findings, Midstate can serve an area with a 2,258 subscriber potential, which, the commission said, is now being served inadequately.

In an action filed in the Callaway County (Mo.) Circuit Court earlier this year, a group of subscribers attempted to block the sale of the New Bloomfield company to the Kingdom Telephone Co., a matter before the court at the time of Midstate's petition for a certificate.

The Midstate company asked for certification to establish exchanges in Brazito, Centertown, Elston, Eugene, Henley, Hickory Hill, Honey Creek, Lohman, Marion, Osage Bend, Osage Bluff, Osage City, Russellville, Schubert, Taos, Enon, Spring Garden, Mary's Home, New Bloomfield, and Guthrie.

Midstate is seeking an REA loan to finance a new system at a cost of $1,025,000.

Each municipality concerned must pass ordinances granting the franchises permitting the Midstate company to serve.

•

The Missouri commission has received the application of the Peace Valley Telephone Co. for a certificate to render service.

## United Telephone Asks Rate Increase in West Virginia

West Virginia's Public Service Commission scheduled a hearing for June 4 on a petition by United Telephone Co. for higher rates in the St. Mary's vicinity of Pleasants County, Wallace and Sardis in Harrison, and Grantsville and Arnoldsburg in Calhoun.

The proposed new rates would include a $10.25 monthly charge for a private business telephone on each exchange and $6.25 for private residential service.

Comparable present rates are $9.40 and $5.30 at St. Mary's; $9.50 and $5.50 at Grantsville and Arnoldsburg, and $4.25 and $3.25 at Wallace and Sardis.

The company said the rate increases, designed to produce $91,806 more in annual revenue, became necessary because of increased operating costs, rebuilding and remodeling of the systems and installation of dial equipment.

## N. C. Company Requests Loan to Pay Debt

The North Carolina Telephone Co., Matthews, on Apr. 4 asked the North Carolina Utilities Commission for permission to borrow 2 million dollars from three insurance companies to pay a debt owed to Stromberg-Carlson Co.

The loan would carry a 5.75 per cent interest rate, to be repaid in 25 years.

The company serves Ansonville, Indian Trail, Marshville, Morven, New Salem, Norwood, Peachton-Polkton, Wadesboro, Waxhaw, and Wingate.

## Approve $39,528 Rate Raise For Florida Independent

The Florida Railroad & Public Utilities Commission on Apr. 3 approved a rate increase yielding $39,528 additional gross annual revenues for the St. Joseph Telephone & Telegraph Co., Port St. Joe (TELEPHONY, Aug. 26, 1961).

The company, which had asked a rate increase that would provide it a 7 per cent rate of return, serves Altha, Apalachicola, Port St. Joe, Carrabelle, Blountstown, Chattahoochee, Wewahitchika, Bristol, Tyndall Air Force Base near Panama City, and certain beach areas.

The Florida commission found a rate of return of 4.64 per cent on St. Joseph T&T's adjusted rate base of $2,837,-366 to be fair and reasonable; and stated that the rate of return would require a net operating income of $131,-654. Net operating income after *pro forma* adjustments will be $112,965 annually; therefore, an annual increase in net operating income amounting to $18,639 and annual gross revenues of $39,528 are required, the commission said.

## Four Companies Request Rate Increases in Wisconsin

The Public Service Commission of Wisconsin on April 16, 17, and 18, heard applications of the Rib Lake Telephone Co., the Siren Telephone Co., and the Clear Lake Telephone Co. for authority to increase rates.

•

On April 17, the Public Service Commission of Wisconsin received an application from the Wisconsin Telephone Co. for authority to increase rates at Stanley in connection with extended area service between Boyd, which is served by the North-West Telephone Co., and Stanley.

## Judge Nullifies Rate Order Granted General of SW in La.

The Louisiana Public Service Commission, it was reported on Apr. 6, has granted the General Telephone Co. of the Southwest, San Angelo, Tex., a 17.5 per cent rate increase, pending disposition of a suit in which the company is challenging the Louisiana commission's order approving a 10 per cent increase.

*(Continued on page 50)*

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## Canadian Company Now Using Portable Exchanges

Telephone exchanges in portable buildings are now being used by the British Columbia Telephone Co. to provide dial service in small communities. By the end of 1962, about 26 of these "trailers" will be in use by the company.

Some of the buildings, with equipment completely installed, have been shipped by rail, others by ship, while still others have been fitted with removable axels and towed by trucks for distances as great as 500 miles.

A portable exchange usually remains in an area until its capacity is reached. It may then be replaced by a larger portable exchange or by a permanent building. The portable exchange which has been replaced can then be moved to another spot.

To date, the company's trailers have varied in length from 9 to 35 feet. Widths are usually 9 or 10 feet, while the height is from 8 to 10 feet. Equipment installation takes place at the company's center in Burnaby, near Vancouver, B. C.

Space in all portable buildings is carefully planned, with an allowance for a work bench. Neatly installed in each are bays of Strowger step-by-step equipment, toll terminating and other equipment necessary for full exchange service, batteries, electric heaters and a gasoline generator, which can be cut in should commercial power fail.

There are no windows in the buildings but construction specifications include louvres for air circulation. The outer skin of the trailers is aluminum sheeting.

Sites for the buildings are cleared, graded and gravelled before a building is unloaded onto a foundation usually including concrete piers and heavy timber sleepers. Steps and a landing are provided at the single entrance to the building and a wood skirting is built around the base of the unit.

## D. of C. Independent Pioneers Hold Record Meeting

They had them standing in the aisles at the National Press Club auditorium in Washington, D.C., on Apr. 4 when the National Capital Chapter of the Independent Telephone Pioneer Association (ITPA) hit the jackpot with its first big-time luncheon. A total of 325 paid admissions crowded the club facilities for a new attendance record for luncheons not sponsored by the National Press Club itself. Emergency tables were erected on the auditorium stage, but still a number of late-comers had to be turned away hungry.

ITPA President Ray Blain, who is also president of the National Capital Chapter, kicked off the proceedings after an invocation by Francis X. Welch. Guests included representatives of various government agencies, communications and electronic companies, and Independent and Bell telephone companies.

The featured speaker of the luncheon was Robert F. Mundy, assistant commissioner for communications, General Services Administration, who discussed the new Federal Communications System, which is being planned to meet the requirements of all civil government agencies. (See talk, page 17.)

**Thirty-six telephone men (shown above) representing Independent operating companies, the military, and General Dynamics/Telecommunication, attended the 60th class of the Stromberg-Carlson Telecommunication Training School in Rochester, N.Y., recently. The six-week course is designed, GD/T says, to thoroughly train operating company personnel in the operation and maintenance of XY dial equipment.**

**The men attending the training sessions were from 20 states and brought the total number of personnel trained at Rochester to 1733. Members of the class are as follows: Front row (left to right): B. C. Ratliff, Mountain Rural Tel. Co., West Liberty, Ky.; E. C. Kraft, Nelson Tel. Coop., Durand, Wis.; J. D. Reppond, United Tel. Co. of La., Marion; G. W. Foster, USASEA, Arlington Hall, Va.; and G. K. Williams, General Tel. Co. of Mich., Pickford.**

**Second Row: J. C. Thompson, GD/T; D. G. Cornelius, GD/T; R. E. Anderson, GD/T; E. D. Van Pelt, Port Byron (Ill.) Tel. Co.; and members of the instructing staff: A. R. Aschettino (Instructor-in-charge), R. E. Boyer, J. A. DiVita, R. J. Stiler, J. Samela, E. W. Dinan, R. R. Bankes, and A. J. Rosati, and L. W. Sanders, USASEA, Arlington Hall, Va.**

**Third Row: W. E. Camp, Company C, US Army, Presidio, San Francisco, Cal.; R. E. Cox, Western Light & Tel. Co., Mountain Grove, Mo.; L. A. Whitten, USASEA, Arlington Hall, Va.; P. Slot, Sugar Land (Tex.) Tel. Co.; F. A. Partlow, Northfield (Vt.) Tel. Co.; N. L. Ward, United Tel. Co. of Ark., Kansas City, Mo.; C. W. Egberts, GD/T; L. G. Reynolds, Coon Valley Coop. Tel. Association, Menlo, Ia.; K. E. Oltmanns, Villisca (Ia.) Farmers Tel. Co.; L. C. Scherr, BEK Tel. Co., Steele, N. D.; M. E. Stiles, Williamstown (N.Y.) Tel. Co.; G. M. Anderson, Farmer's Mutual Tel. Co., Lynden, Wash.; and G. H. Riegel, Northwest Tel. Co., Tomah, Wis.**

**Back Row: R. W. Sattler, Leelanau Tel. Co., Cedar, Mich.; T. J. Goodrich, Northfield (Vt.) Tel. Co.; V. B. Santillana, USASEA, Arlington Hall, Va.; C. S. Dubose, USASEA, Arlington Hall, Va.; W. E. Olson, St. James (Minn.) Tel. Co.; L. Nyre, Mondovi (Wis.) Tel. Co.; R. N. Edwards, Twin Lakes Tel. Co., Branson, Mo.; M. V. Brodt, Fennimore (Wis.) Tel. Co.; D. E. Byers, United Tel. Co. of Kan., Hiawatha, Kan.; W. H. Sanford, Margaretville (N.Y.) Tel. Co.; E. S. Bostic, Piedmont Tel. Co., Manassas, Va.; W. R. Ebert, Northwest Tel. Co., Tomah, Wis.; and W. T. Mack, Southland Tel. Co., Atmore, Ala.**

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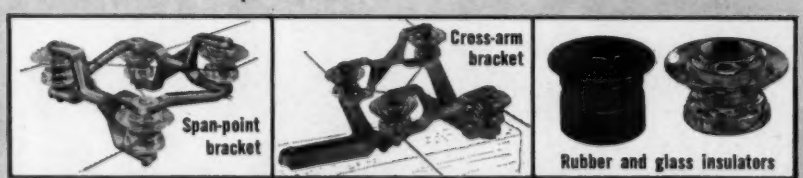


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## IN THE NATION'S CAPITAL

*(Continued from page 16)*

As we have reported, there is little sentiment in either the Senate or the House for operation of the system by the government, but Senators Kefauver (D., Tenn.) and Morse (D., Ore.), and other advocates of government ownership, are planning to make a long fight on the senate floor for their proposal.

**Utilities Disagree on Tax Bill**

The Senate Finance Committee which is studying the tax bill passed by the House heard conflicting views from utilities. Representatives of electric utility companies urged that the 3 per cent credit in the bill be increased to bring it in line with the credit of 7 per cent allowed for other segments of industry.

The AT&T witness, Vice President and Comptroller Alexander L. Stott, testified on the other hand that the tax credit would not provide an incentive for telephone companies. He said the manner in which tax credits would have to be claimed might, in fact, impair rate stability. He asked instead for more adequate basic depreciation allowances.

Secretary of the Treasury C. Douglas Dillon favored the elimination of any tax credit for all utilities except railroads.

The United States Independent Telephone Association's position is that depreciation rules should be liberalized, but, if this is found by Congress to be inexpedient, then utilities should be entitled to the full 8 per cent tax credit which President Kennedy recommended for other industries.

The suggestion has been advanced that the divergent views of utility companies could be resolved by putting the tax credit on a permissive basis. One possible problem with this, however, is that, if a particular company chose not to take advantage of the tax credit, it might be placed in an embarrassing situation with its regulatory commission. The commission might very well reject a request for a rate increase on the basis that the company could have avoided the increase by taking advantage of the tax credit windfall.

**REA Loan Information Public**

The Rural Electrification Administration has reversed a 26-year-old policy on keeping loan applications secret. Representative Moss (D., Cal.), chairman of a House Government Information Sub-committee, and a long-time foe of secrecy in government, announced that REA Administrator Norman Clapp ordered the change after a series of discussions with the committee.

The REA directive set forth procedures for making details of loan applications public, subject to financial or business information restricted by law.

**FCC Takes Steps to Reorganize**

The Federal Communications Commission announced that it has tentatively decided upon the further rule changes it believes appropriate to carry out the provisions of the FCC Reorganization Act enacted on Aug. 31, 1961.

The purposes of these new rule changes are (1) to relieve the commission of routine adjudicatory matters to enable it to devote more of its time to major matters of policy and plan-

ning and to the more significant adjudication cases, and (2) to expedite the handling of the commission's large workload. The major device for the accomplishment of these purposes is the establishment of a review board, consisting of senior and experienced commission employes.

The FCC further announced that its general counsel has met with a committee of the Federal Communications Bar Association to discuss the rules designed to implement the procedural reforms authorized by the legislation. Such conferences are to continue, and the FCC hopes that, with the cooperation and assistance of the FCBA, these new procedures will be effectuated promptly to the benefit of the public, the communications industry and the commission.

A previous step to implement the new law was taken last September when the commission amended its rules to augment delegation of authority to its Office of Opinions and Review.

The FCC extended from Apr. 16 to May 16 the deadline for filing comments on its proposal to establish fees for processing licenses, applications, etc.

## CHANGE AND CHALLENGE

*(Continued from page 19)*

leased intercity circuit facilities for converting telephone traffic from the public message to government leased line at substantial savings.

- Converting the system for ordering GSA circuit facilities from the 10 regions to a centralized circuit management staff.
- Effecting an agreement with National Aeronautical and Space Administration (NASA) for the joint ordering of NASA and General Services Administration (GSA) circuits in TELPAKS. This agreement will constitute the basis to effect the same arrangement with other civilian agencies.
- Preparation of technical requirements for closed circuit TV and mobile radio equipment that may be used by agencies to insure technical performance when contracting for equipment.

### Nine Specific Areas

Our efforts in carrying out the overall FTS program are directed in nine specific areas. These are:

(1) Expand the existing GSA telephone and record communication services to meet the interim needs of civil agencies.

(2) Plan and effectuate a telephone switchboard consolidation program for federal civil agencies in order to provide more efficient and economical operations throughout the nation.

(3) Establish a nation-wide circuit switching network.

(4) Establish a nation-wide automatic store and forward network.

(5) Plan for radio network consolidation to provide maximum service on a day-to-day and emergency back-up basis.

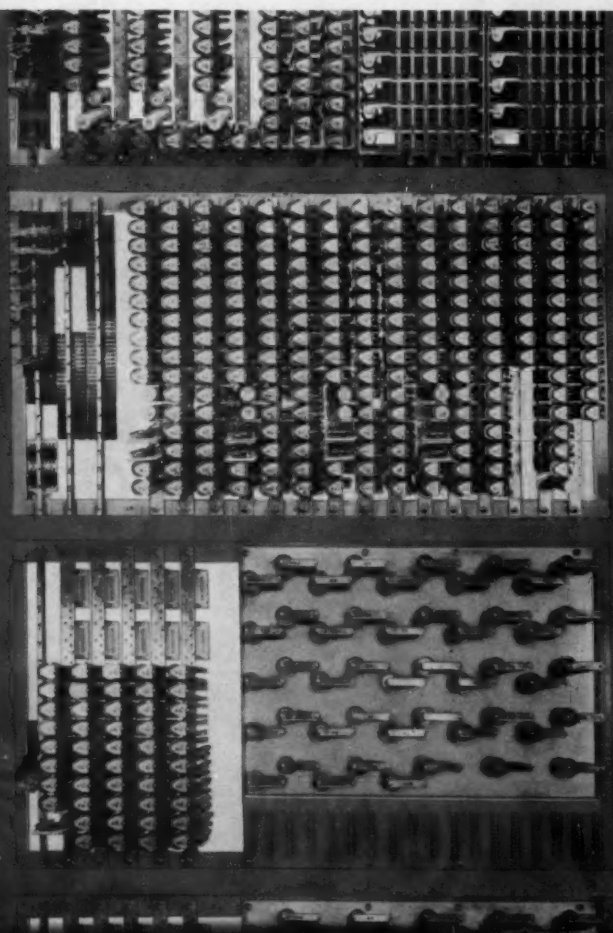
(6) Provide the necessary communications security equipment and services as required.

(7) Provide a circuit management program which will assure maximum flexibility of routings at minimum cost to the government.

(8) Provide representation before state and federal regulatory bodies.

(9) Provide technical advice and assistance to federal civil agencies on communications matters.

We have looked into the future to see what may be in store for us and

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MITI-MAST US A TOWER OF STRENGTH

we have briefly examined the FTS as a step to this future. Let us now examine the trend in government regarding the organization to guide and control these developments. As electronics becomes more sophisticated and, therefore, more complicated, the trend becomes more apparent. More and more pressure is being exerted for consolidating and centralizing of facilities, services and the manpower to develop and administer these services.

Within the past two years we have seen the establishment of the Defense Communication Agency for the purpose of consolidating the bulk of the military service networks into a single integrated system. We have also seen the establishment of the Office of Communications within GSA to combine the bulk of the separate civilian networks into a single system.

### Director Appointed

More recently we have witnessed the establishment of the post of Director of Telecommunications Management for tne federal government with Presidential authority to improve over-all telecommunications management within the Executive Branch. President Kennedy has sent to congress a reorganization plan to establish a new Office of Science and Technology within the executive office of the President to assist him in coordinating major federal policies and activities in this field.

With this present trend toward centralization we could even speculate in the future on the establishment of a separate electronics agency to administer the bulk of the communications-electronics functions of the executive branch. Even with this trend toward centralization it will be many years, and require much major reorganization of the government, before we see the elimination of the communication function within agencies.

### Lean Toward Coordination

In the future this function, however, will change toward providing specialized services for the agency that normally could not or would not, for economical reasons, be provided services by the centralized group. I believe that agency communications will lean more and more to the coordination function with the central group, and more and more to the research and development function to solve the special problems of the agency.

Examples of this are the Post Office in handling of mail, the Veterans Administration and Health, Education and Welfare in medical electronics and diagnostic concepts, the FAA in

air flight control and many, many others.

**Summary**

In closing, let me stress that a wonderful era lies ahead for us in electronics and communications in particular as we progress into the Golden Age of Electronics. We as individuals can meet this change and challenge, and contribute significantly to it, if we prepare ourselves by exerting the imagination, the determination, and the conviction to forge ahead. We as a group can meet this change and challenge if we but cooperate one with another to promote the team spirit.

We, as a communications group, have in our power the ability to improve the internal operations of government which is our common goal—for greater efficiency and greater service to the general public. This can be accomplished if we but will ourselves to do it.

## TRAFFIC PAGE

*Concluded from page 37*

to happy employes, doing their best to do a proud job and render good service.

Job performance is a working picture of the person performing the job. How do you photograph?

### Traffic Quiz

**(1) Q. What is meant by a cross-boundary telephone?**

A. A cross-boundary telephone is located in a town outside the state boundary of the exchange it works out of. Example: Haslam, Texas, telephones work out of Logansport, Louisiana, T. C. Shreveport, La.

**(2) Q. If you receive a request for a cross-boundary number, should you quote the NPA code to the OTC operator?**

A. Yes, if it is outside your numbering plan.

**(3) Q. If a name is hard to understand, should the operator spell it when passing or quoting it?**

A. Yes, if it seems desirable to do so.

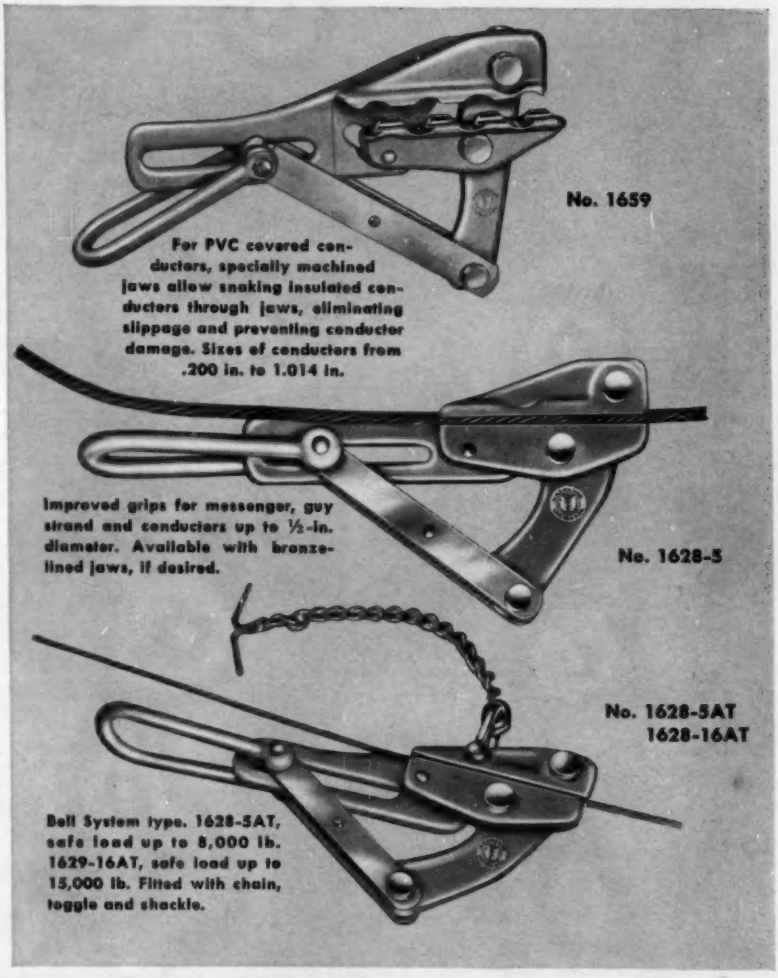
**(4) Q. In spelling a name, is it necessary to use the phonetic alphabet?**

A. Only if there seems to be some doubt as to the letter quoted. Say for example, "J for James" or "Is that T for Thomas?"

**(5) Q. In passing a seven-digit number, where should the emphasis be?**

A. Emphasize the first three numerals and the fifth one: as, 274-3121 "*Two seven four,* three *one* two one?"


# KLEIN Chicago Grips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## SPACE COMMUNICATIONS

*Continued from page 27*

And to rely on the operation of the monopoly unregulated and in the full glare of public scrutiny as to what it is doing, as one alternative choice. And the other is government ownership of some kind. And I think either of these would be preferable to the present."

### NTCA For Government Ownership

The telephone cooperatives were brought into the hearings in the person of Morton Langstaff, executive manager of the National Telephone Cooperative Association.

Explaining that his organization represents telephone cooperatives throughout the United States, primarily those who borrow from the Rural Electrification Administration, Mr. Langstaff declared that they favored government ownership and control of the space satellite communications system. He went on to say:

"In hearings held before a Subcommittee of the Committee on Agriculture, House of Representatives on Feb. 14, 15, 16, 1949, and before the Committee on Agriculture and Forestry, United States Senate, June 11, and Aug. 3, 4, 5, 8, 9 and 10 1949, relating to the telephone amendment to the REA act, you will find much opposition to that amendment.

"The opposition came chiefly from personnel representing the views of the Bell Telephone Company, United States Independent Telephone Association, General Telephone Corporation, and several managers and presidents of Independent telephone systems.

"It is interesting to note that some of those so opposed to the REA telephone amendment are now borrowing large sums of money from this agency. Another quite interesting facet of the testimony is the now proven fact that so many operating telephone people could be so wrong about the future of rural telephony and the role of REA-financed telephone systems."

Then later Mr. Langstaff said:

"Briefly going back to the testimony we mentioned earlier regarding the REA telephone program, we find that opponents of that program feared that by having a government agency make loans to telephone companies and cooperatives, it would be the ruin of private telephone systems in this country.

"Of course, nothing could be further from the truth, but I would imagine that you will again get the same type arguments on the space communications program. Again, it would not mean that the government would be in the communications business. Rather, it would assure all authorized communications carriers—and, I might add, manufacturers and suppliers—a place in the program."

### FCC Answers Critics

Chairman Newton N. Minow of the FCC, accompanied by Commissioners Hyde and Craven as well as staff members, appeared before Senator Kefauver's subcommittee on Apr. 6. Commissioner Hyde explained the principle the FCC has followed of negotiating and requiring changes without the launching of all-out rate cases in the telephone industry. Here is his testimony on that subject:

". . . . One of the first projects of the newly created Federal Communications Commission in 1934 was an investigation of the telephone industry, which was a very broad investigation in respect to all of its operations.

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"But, before it was concluded, the commission resorted to negotiations in order to make immediately available the changes in rates and regulations which the investigation indicated might be appropriate. And, as a result of that investigation, the commission adopted a policy, not an exclusive policy, but a pretty general policy of trying to maintain a system of continuous regulation that would keep abreast of changes from year to year rather that have the commission resort to tremendous hearings which could last several years and which could delay—or which could end up at a time when the conditions which prompted the investigation might not be current."

**Minow Asks Clarification**

The commission went on to vigorously defend itself from various charges of other witnesses in the week-long Kefauver hearing. Declaring that the so-called "Compromise Bill" was "workable", Chairman Minow touched upon several items that he thought should be clarified. Among these were the relation of the financing of the space satellite corporation and the carrier rate base; the use of the phrase insuring "effective competition" with respect to the procurement of equipment and services; and the provision for three government directors whose work or decisions as members of the satellite board of directors might conflict or cut across lines of FCC responsibility.

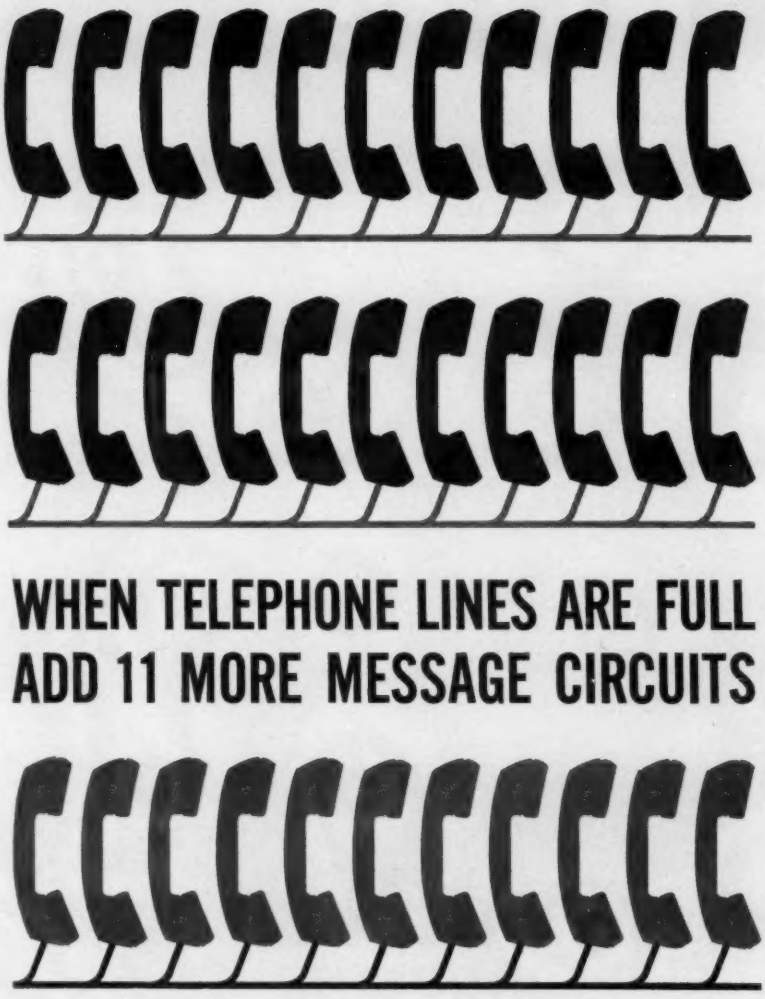
Mr. Minow continued to support private ownership of the satellite corporation under government regulation. In his support of the "Compromise Bill," the FCC head emphasized the importance of taking action so that the U. S. can "move ahead with the greatest possible speed."

**Hearings Continue**

Senator Kefauver has announced that he is continuing his Anti-trust and Monopoly Sub-committee hearings. He is expecting witnesses from the State Department, RCA, and Hughes Aircraft Co., among others.

Senator Pastore's hearings on the "Compromise Bill" are expected to last four days. Among his witnesses will be the National Space Council, State Department, NASA, the FCC, AT&T, Hawaiian Telephone Co., IT&T, RCA and for labor the CWA.

Next week's concluding article of this series will cover the highlights of the Senate Commerce Sub-committee hearings. As mentioned, they promise to be highly significant in the area of space satellite communications legislation.

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## EMPLOYE TRAINING

*Concluded from page 25*

new manager couldn't get a response; and the problem was up to me.

In the early meetings the men were afraid to open their mouths. But I finally won their confidence, and gradually convinced them that their ideas would get a fair hearing by the new management. Then came a flood of 87 practical suggestions for improving operations. Top management was greatly surprised, but handled each suggestion, and reported back to the group.

From that time on, it was a different company. There was no holding back by employes. Ideas came freely from all quarters. Men cooperated happily.

Sometimes taking a leader from the group itself is the touchstone to free and open discussion. In one difficult situation, we rotated leadership among the group members. And, although an expert in conference work could complain of the leadership technique, the ideas flowed, and that was what counted.

**Reaches Its Goal**

Whatever the method, conference training reaches its goal when men get grievances off their chests, when they are satisfied with the reasons for rules and orders, when they realize that their ideas have actual weight in formulating policy.

Now for successful conferences, I am a great believer in the value of a film-presentation of the subject. A carefully-chosen film presents the subject graphically and quickly. The group is alerted.

By showing experiences in other companies, the film draws out the experiences of the group through such questions as: "Do you agree with this way of doing things?" "Do you have a better way?"

Surveys by leaders who have used training films in direct comparison with the lecture method have proved that, on the average, there was 55 per cent quicker perception of the ideas presented; 75 per cent greater retention. Vivid pictures form a memory pattern that is lasting.

The training films I prefer are the sound-slide films—strip films with recordings. They move along step-by-step for identification, understanding and memory. A sound-slide projector costs about $150. There are some 800 training films available, with many coming out each year.

At present there is no directory of training films. Anyone interested in getting a list may address me through this magazine; and I will provide information on any subject.

**Training for Executives**

Before closing, let me answer another question that is often asked: "Does the executive need training?"

My own experience suggests a "Yes" to this query. In one organization in which I had responsibility for training, we found it advisable to set up an executive group to meet each week to consider the topic that would be presented to supervisory groups the following week. The supervisors, in turn, considered the topic for presentation to workers the next week.

This procedure had two happy advantages. It insured that the topics were presented to the lower groups with the current thinking of the next higher group. Also, the questions that the higher-ups were anxious to have answered in discussion were presented. This procedure worked, and it had an interesting by-product. Executive after executive came forward to tell of personal values from the conferences. One said he now knew how to take the sting out of reprimands; another that he realized now his mistakes in the way he was giving orders.

**Value of Training**

A company can realize the value of training by trying it in the way that best fits its conditions.

In summary:

Training has straightened out unworkable procedures that were blocking company progress.

It has located leaders, and built executives.

It has promoted unity on the part of workers and supervisors as nothing else has.

It has stimulated a full day's effort, with loyalty to the company.

It has prevented carelessness, and the loss of life and limb.

There's no mystery about a conference training program. There's no magic. It's a matter of taking hold and working one out.


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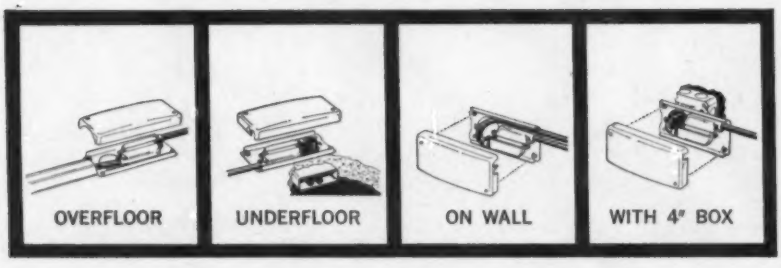


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rector of the four C. & P. companies operating in Washington, D. C., Maryland, Virginia, and West Virginia. He succeeds John D. deButts, who recently was elected president of Illinois Bell Telephone Co.

J. Hillman Zahn, vice president, accounts, for the C. & P. group, succeeds Mr. Clow as vice president and a director of C. & P. of Washington.

## COURTS AND COMMISSIONS

*(Continued from page 38)*

The rate increase was granted by District Judge C. A. Barnett, in a ruling requiring the General company to post a 50-thousand-dollar bond for refund to subscribers of any possible difference between the rates under the 10 per cent increase and that decided upon by the court.

In taking this action, Judge Barnett nullified a commission order of Sept. 14, 1961, in which a 39.5 per cent increase was denied, and a 10 per cent increase granted.

The General company operates Louisiana exchanges at Belcher, Gilliam, Hosston, Ida, Sarepta, Shongaloo, Springhill, and Vivian.

### One Asks to Drop FES; 2nd Seeks EAS OK in Wis.

The Wisconsin Public Service Commission on Apr. 11 was to have heard the application of the Stockbridge & Sherwood Telephone Co. Inc., Stockbridge, for authority to discontinue its foreign exchange service agreement with Wisconsin Telephone Co.

•

On Apr. 12 the commission was to have heard the application of General Telephone Co. of Wisconsin for authority to increase rates at Whitelaw in connection with the proposed provision of extended area service between Whitelaw and the Manitowoc exchange of Wisconsin Telephone Co.

### Authorize Financing for One; Deny a Rate Request in Ala.

The Alabama Public Service Commission on Apr. 4, in approving plans whereby local telephone companies may seek loans for expansion, denied one of the petitioning companies, the Ragland Telephone Co., the raise it asked for repayment of a loan (TELEPHONY, Mar. 3).

The Ragland company had asked for a raise amounting to $2,500. However, the commission left the door open for the company to file a revised rate schedule which would produce an $82 monthly increase, rather than the requested $205.50 the company said it needed to repay a $17,000 loan. Ragland serves around 400 subscribers presently.

The Alabama commission, in the case of the Jackson County Telephone Co., Scottsboro, approved the company's plan to obtain $200,000 financing from the General Telephone Co., its parent. The Jackson County company would obtain expansion funds from the General company as needed on notes to mature a year from the date of the loans. The company proposes to extend service to 502 new subscribers.

### Authorize Rate Increase For Illinois Company

The Illinois Commerce Commission on Apr. 3, approved a rate increase for the Mason City Telephone & Telegraph Co., retroactive to Dec. 8, 1961, for its one exchange (TELEPHONY, Dec. 2, 1961).

The old and new rates for the company, which provides about 89 subscribers with common battery and magneto service, are as follows:

| | *Old* | *New* |
|---|---|---|
| One-party business | $4.75 | $5.50 |
| Two-party business | 4.00 | 4.50 |
| One-party residence | 3.75 | 4.25 |
| Two-party residence | 2.75 | 3.25 |
| Four-party residence | 2.25 | 2.75 |

### Approve Sale of Securities For New York Company

The New York Public Service Commission on April 11 authorized Sylvan Lake Telephone Co., Inc., of Hopewell Junction to issue and sell new securities having a value of $425,000.

Included will be $225,000 in 5⅞ per cent mortgage bonds to be sold to Berkshire Life Insurance Co.; 1,000 shares of 5 per cent $100 par value, cumulative preferred stock which have been subscribed by company patrons, and 4,000 shares of common stock to be sold, under pre-emptive rights, to present stockholders at $25 per share.

The proceeds from the sale of the securities will be used to retire outstanding short term indebtedness incurred by the company to finance plant improvements. Since 1946, the company has expended more than 1 million dollars for modernization and expansion of its facilities.

Sylvan Lake Telephone serves about 2,400 stations in parts of the towns of East Fishkill, Beekman, Union Vale, LaGrange and Wappinger, all in southern Dutchess County, through a dial exchange at Hopewell Junction. Subscribers are provided with toll-free service to the New York Telephone Co. exchange at Poughkeepsie.


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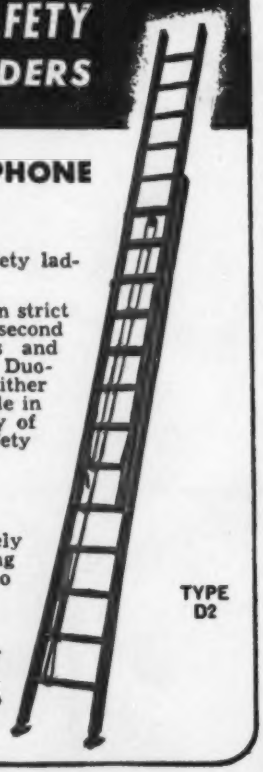

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## REPLACE EQUIPMENT?

*Continued from page 36*

past the useful life of the machine. Then, even though most machines represent substantial capital investment, it is far better to replace them than to pour overhead dollars into excessive maintenance.

Local charges for machine and equipment maintenance sometimes enter into this picture. Where these charges are excessively high, it may pay to replace the equipment slightly ahead of expected normal or useful life.

**Type of use.** If any piece of equipment is used under extremely severe or adverse conditions, its normally useful life will be materially shortened.

Humidity and heat, for example, often severely affect the useful life of all metals. If equipment is used under conditions of great variance from the normal, either "plus" or "minus" conditions, the useful life will be affected.

**Quality of maintenance.** The skill and efficiency of the mechanic who works on a modern, complicated electric office machine will have a great deal to do with determining when that unit shall be replaced. The man who knows his business can extract every day of normal useful life from any office machine, while the individual who lacks the needed skills, no matter how conscientious, can affect it adversely. There have been many cases where poor maintenance and repair work have cut in half normal useful life of office machines.

**Initial quality** of equipment. The figures shown in the accompanying chart are for top quality office machines and equipment only. If they are to be used in application to machines where quality is not always up to top standards, a figure of approximately 25 per cent less should be applied.

**Future use** expected of an older machine. The degree of severity of use which a company may expect from equipment in the year ahead should always be considered. As any unit nears the end of its useful life, its efficiency decreases, and it becomes more subject to breakdown and need of repair. Where only sparse use will be applied, it can do the job for another year. Where severe use is certain, replacement is very definitely in order.

**New inventions** or developments. Where an improvement has increased the efficiency of equipment by say, 25 per cent, the reduced payroll and overhead costs it brings about can well

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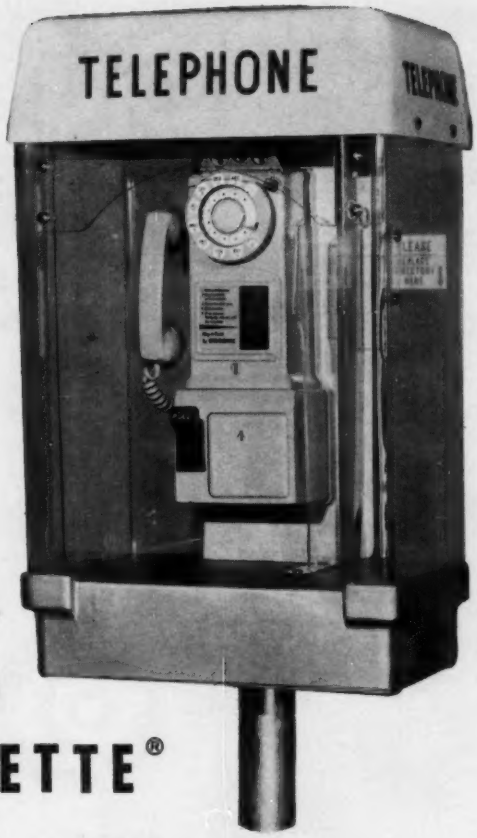


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justify replacement much sooner than normally expected.

A company should never lose sight of the fact that office overhead costs enter into consideration of equipment replacement. The total overhead figure should never be overlooked. If inventions or improvements can materially reduce this general overhead cost, it is seldom wise to "save" money by putting off replacement of old machines with more modern equipment.

All of the foregoing factors affect the decision of when replacement of office equipment or machines should be made by the individual telephone company. Applying these factors properly can insure a maximum return from the capital investment in equipment.

## Orville D. Small Retires From United Utilities

Orville D. Small has retired after more than 41 years with United Utilities, Inc., and its predecessor companies, according to C. A. Scupin, president.

Mr. Small began his career in the utilities industry in 1920 as a bookkeeper for the various companies which formed the nucleus of the present United Utilities System.

O. D. SMALL

From 1924 to 1928, he served as assistant treasurer for United Power and Light Co. From 1926 to 1935, he held the same position for United Trust Co. He was appointed secretary and assistant treasurer of United Utilities in 1942, and in 1959, became secretary and treasurer, the position he held at the time of his retirement.

He is a graduate of Marysville, Kan., high school and the University of Nebraska. He served with the 10th Infantry Division during World War I and is a member of the Abilene, Kan., American Legion Post and the Lions Club.

D. M. NICOLAY

DEE ADAMS

Named to succeed Mr. Small are Donald M. Nicolay, who has been auditor and assistant secretary since 1929, and Dee Adams, whose service record with the system dates from 1922. Mr. Nicolay will assume the post of secretary, while Mr. Adams has been named treasurer.

## Phoenix Employes Participate In Telephone Courtesy Class

More than 600 Phoenix, Ariz., city employes who make extensive use of telephones in their work recently participated in a telephone courtesy class. The class featured a movie on use of telephones, a demonstration and discussion by a representative of the Mountain States Telephone Co. and comments by city department and division heads regarding the importance of telephone courtesy.


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**Southwestern Bell Telephone Co. will promote both color telephones and Yellow Pages in outdoor advertising during 1962. "Personal extension phones" will be the theme in Spring and Fall promotions. Thirty-sheet posters will carry this message for five months in 51 markets throughout the territory served by Southwestern Bell.**

## TEXAS CONVENTION

*Continued from page 29*

traffic and plant problems. Roland McCullough of San Angelo, Tex., served as commercial conference chairman; and J. P. Bowden, also of San Angelo, spoke on "Employe Sales Promotion". R. L. Post of Brownwood narrated the presentation of the film, "The Independent".

Hiram Jones of Tyler presided over the traffic conference. Speakers were A. W. Lambert of San Francisco, Cal., who asked, "Why Study?"; and Walstein Smith of Waco, Tex., who spoke on "The Customer's Viewpoint".

Ken G. Madry of Brownwood was chairman of the plant conference; and Al Hoehn of Dallas elaborated on the topic, "Effects of Local Loop Design on Transmission".

**W. F. Corman** of Atmore, Ala., as a speaker on the closing day of the meeting, probed the question of "Who and What Is An Independent?"

**For the Rural** Electrification Administration, E. F. Renshaw, assistant administrator, asked the operating companies, "Can REA Help You?"

REA can help Independent telephone companies serve rural people who have for so many years been beyond the reach of telephone lines, Mr. Renshaw said, and added that there is still a lot of improving and service extension to do.

He pointed out: "There are more farms and ranches here than in any other state—more than a quarter of a million. About 56 per cent of them—a little better than half—have some kind of telephone service. Census data which we have analyzed at REA show 58 counties in Texas with 500 to 1,000 farms still unserved by any telephone system. There are 16 more counties with from 1,000 to 2,000 farms lacking telephones. One additional county has more than 2,000 farms without telephones."

The REA representative said, "The telephone service potential that faces you in Texas for the next few years is the biggest opportunity in your lifetime. The task of bringing adequate


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service to the rural districts on anything like an area coverage basis is a back-breaking assignment."

**Referring to** current REA loan policies, Mr. Renshaw said, "REA has a strong affinity for the Independent systems because it counts on the Independents to serve much of the rural area which needs telephones, and because we think locally-owned Independent operation is the kind that can be most responsible to the needs of the local communities."

The Texas association re-elected to its board of directors the following whose terms had expired: W. S. Bain of San Antonio; Marion A. Clay of Lufkin; E. H. Danner of San Angelo; D. G. Gardner Jr. of Nocona; R. A. Goodson of Dallas; J. T. Ricketts of Vega; and W. G. Winters of Houston.

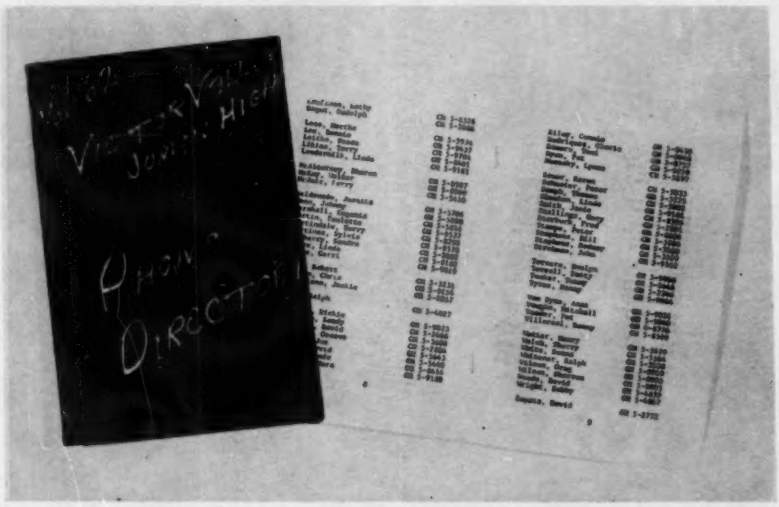
The convention elected O. K. Hitchcock of Sweeny to the board to fill the unexpired term of Corwin Mendenhall of Anahuac, resigned.

Oscar Burton of Tyler is an *ex officio* member of the board.

Other directors serving the Texas association are: H. Y. Price Jr. of San Marcos; D. M. Robb of Electra; P. D. Grinstead of Kerrville; Fabian Bearden of Baird; Guy Smelser of Bogota; D. T. Strickland of Brownwood; Morris S. Burton of Tyler; J. T. Chambers of Tenaha; Dee Cole of Greenville; C. R. Dowd of Hawkins; C. H. Gilmer of Rocksprings; Charles Hendrix of Brazoria; and J. B. McDuff of Crockett.

**The board** elected these officers: President, Mr. Bain; first vice president, Mr. Price; second vice president, Mr. Robb; treasurer, Mr. Grinstead; and J. B. Haley of Austin, executive secretary.

Texas directors reelected to serve on the executive committee are: Messrs. Bain, Clay, Gardner, and Goodson; Guy Smelser of Bogota; Mr. Strickland; and Mr. Winters.



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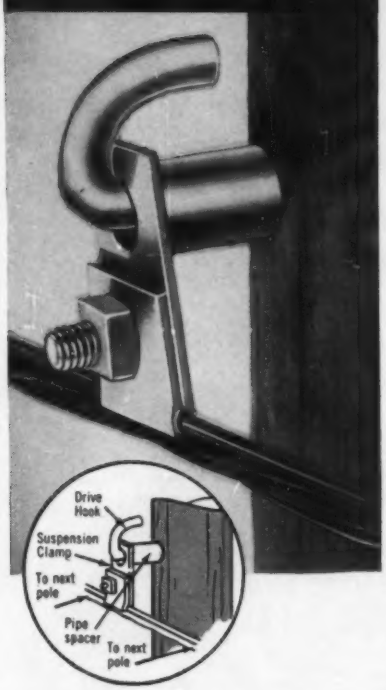


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**Miss Emily Blanco of General Tel. Co. of Fla. talks with Roberto F. Chiari, president of Panama (right), and Eduardo Gonzalez, president of Comunicaciones, S.A., after the company's successful cutover to new automatic equipment.**

## General Telephone Instructor Helps on Panama Cutover

A General Telephone Co. of Florida service assistant, Miss Emily Blanco, recently returned to Tampa from Panama where she was on loan to assist the telephone company, Comunicaciones, S. A., in training operators in the use of new equipment.

Miss Blanco got the assignment because of her 16 years' experience as an instructor and because she speaks fluent Spanish.

She reported that she trained 28 boys and girls in AE manual switchboard operation during the 30-day period. The switchboard used came from Valparaiso, Indiana. It had been a 16-position board, modified into eight 2-position boards.

"I started from scratch," she said, "because there was no one with experience." She added that the most difficult part for her was translating from English to Spanish the outlines. she took with her, then preparing lesson plans from the outlines.

"The girls learned pretty fast," she said. "Most of them were young. Most of the boys had some experience since they had worked with the public through telegraph company jobs."

The male operators worked the night shift and day relief, Miss Blanco explained.

She said the engineers did in four months what would normally have been a one-year job.

At cutover time, the president of the Republic of Panama and the governors of the cities of Panama City and David took part in the ceremonies. The cutover was well covered by the nation's press and went off smoothly, she reported.

## Bell Pioneers Announce Leadership for 1962-'63

The Telephone Pioneers of America (Bell System companies) have announced their new officers for 1962-63. Heading the association composed of more than 210,000 active and retired pioneers will be Erskine N. White, president of New England Telephone & Telegraph Co., who will assume his office on July 1.

Other officers are: Senior vice president, Ben S. Gilmer, president of Southern Bell Telephone & Telegraph Co.; and these vice presidents, elected for two-year terms:

Edward Beckett, Western Area personnel supervisor, The Bell Telephone Co. of Canada, Toronto, Section 1; Harry P. Dougherty, general plant manager-Oklahoma Area, Southwestern Bell Telephone Co., Oklahoma City, Section 4; Lawrence B. Sheffey, commercial staff operations manager-East, Southern Bell Telephone & Telegraph Co., Atlanta, Ga., Section 7.

Angus C. Porter, general traffic manager of The Chesapeake & Potomac Telephone Co. of West Virginia, Charleston, Section 8; Mrs. Gertrude H. Frese, general personnel director of New York Telephone Co., New York City, Section 11; and Miss A. Claire

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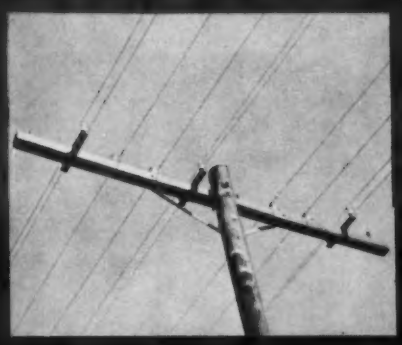

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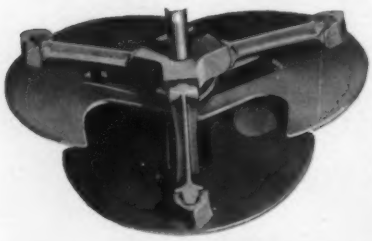

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Browne, executive secretary to Mr. White, Boston, Mass., Section 12.

Telephone Pioneers vice presidents continuing in office for a second year are: Mrs. Hellen W. McKenney of Los Angeles, Calif., Section 2; Robert B. Nelson of Waterloo, Ia., Section 3; Gordon H. Ruggaber of Milwaukee, Wis., Section 5; George B. King of Columbus, O., Section 6; James J. Roche of Harrisburg, Pa., Section 9; and LeRoy G. Baum of Newark, N.J., Section 10.

## Rohn Manufacturing Expands Peoria Plant Operations

Two new buildings with total floor space exceeding 10,000 square feet were recently put into operation at the tower manufacturing plant of Rohn Manufacturing Co., Peoria, Ill.

Also added was additional warehousing area for storing completed tower sections. These additions to the present facilities give total manufacturing space exceeding 100,000 square feet.

According to Dwight Rohn, president, the recent expansion was necessary to keep up with the increased demand for Rohn communication towers. Rohn has long been a large supplier of home TV towers and the wide acceptance of heavy communication and micro-wave towers has forced the need for continually increasing plant manufacturing facilities, Mr. Rohn said.

## Van Deusen West Coast Toll Ticketing Sales Engineer, GD/T

General Dynamics/Telecommunication has appointed Harvey S. Van Deusen as a toll ticketing sales engineer at the company's West Coast sales offices.

E. R. Sears Sr., West Coast branch sales manager, pointed out in announcing the appointment that the increased interest in XY toll ticketing in that area warrants a full-time sales engineer. When work now in progress is completed, he stated, 108 telephone offices in the West Coast territory will be served by Stromberg-Carlson toll ticketing.

Mr. Van Deusen joined Stromberg-Carlson in 1956 and immediately entered the toll ticketing field. He has visited practically all of the XY toll ticketing readout offices now in operation and has done engineering work on many of them.

In 1958, Mr. Van Deusen moved to

## Budelman Holds Two Schools On Equipment in Texas

The Budelman Electronics Corp., Stamford, Conn., recently held two one-day schools in Texas on its carrier and repeater equipment for the benefit of customers in the area. The schools were sponsored by the Nelson Electric Supply Co., Dallas.

The first school was conducted in Lubbock and the second at the offices of the Caldwell County Telephone Co. The instructor for both schools was Earl F. Howlett, manager of the Carrier Division of Budelman Electronics, who designed and developed the carriers and repeaters for the corporation.

About an hour at each school was devoted to instruction on carrier and repeater equipment and the balance of the day to discussion of questions brought up by the group.

Attendance totaled 65 representatives from 28 telephone organizations. More schools are being planned for the future.

**"Students" at the first school conducted by Budelman Electronics Corp. pay close attention. The school on carrier and repeater equipment was held at the Holiday Inn in Lubbock, Tex.**

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the Rochester, N. Y., headquarters as a toll ticketing service engineer in the customer service department. He was later transferred to the West Coast

H. S. VAN DEUSEN

branch as office manager and served in that capacity until assuming his present duties.

Mr. Van Deusen's experience also includes a number of years with the Columbia Rensselaer Telephone Corp., the Western Electric Co., and the General Telephone Co. of Upstate New York.

## USI Appoints T. B. Caveny Switchboard Sales Manager

The United States Instrument Corp., Charlottesville, Va., has announced the appointment of Thomas B. Caveny as switchboard sales manager.

According to John T. Robertson, USI vice president-marketing, "Mr. Caveny has been appointed to this position because USI sales are rapidly expanding and Mr. Caveny is qualified by training and experience to make a significant contribution to USI's sales expansion program in the area of switchboard sales."

Mr. Caveny, a native of Chicago, attended Wright Junior College (Chicago) and Texas Tech (Lubbock). Prior to joining USI in May, 1958, he was employed for three years with North Electric Co., Galion, Ohio. There he was chief crossbar project engineer and assistant to the director of engineering. For five years prior to that, he served with Kellogg Switchboard and Supply in Chicago as installation foreman, field engineer and equipment engineer. He also spent nine years in the U. S. Army Signal Corps.

Since joining USI, Caveny has served as sales engineer, equipment and installation engineer, chief systems engineer, and now switchboard sales manager.

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AMBITIOUS MEN qualified as Station Installers, Equipment Installers, Cable Splicers, Linemen. Work in Midwest. Harris-McBurney Company, Inc., P.O. Box 267, Jackson, Mich.

CHIEF ENGINEER—with background as plant superintendent for progressive Northern California telephone company. Write Assistant General Manager, P. O. Box 1789, Redding, Calif.

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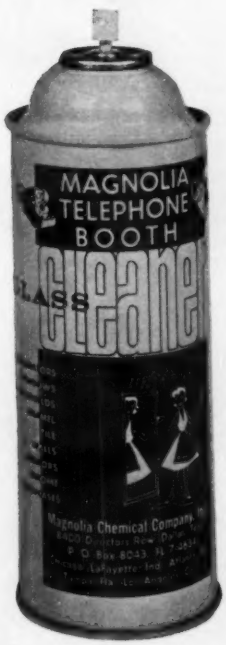

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